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for RETAILER - WHOLESALER - MANUFACTURER

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AUGUST 14, 1937

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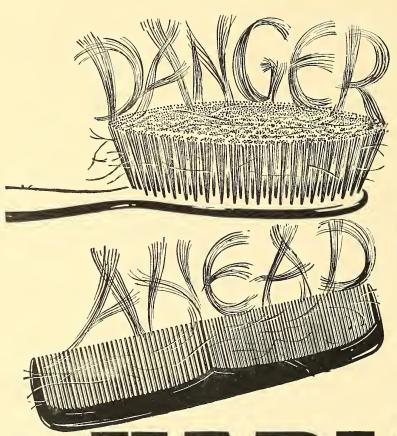
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Index to Advertisers, pp. 5 & 6.

EDUCATIONAL NUMBER



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This year will see yet another stride forward in the sales of the world-famous HARLENE HAIR TOILET PREPARATIONS. BIG BUSINESS will come to those who regularly stock these regularly "asked for" lines. Order up a good stock **NOW** and thus make sure you will not disappoint customers in **your** locality.

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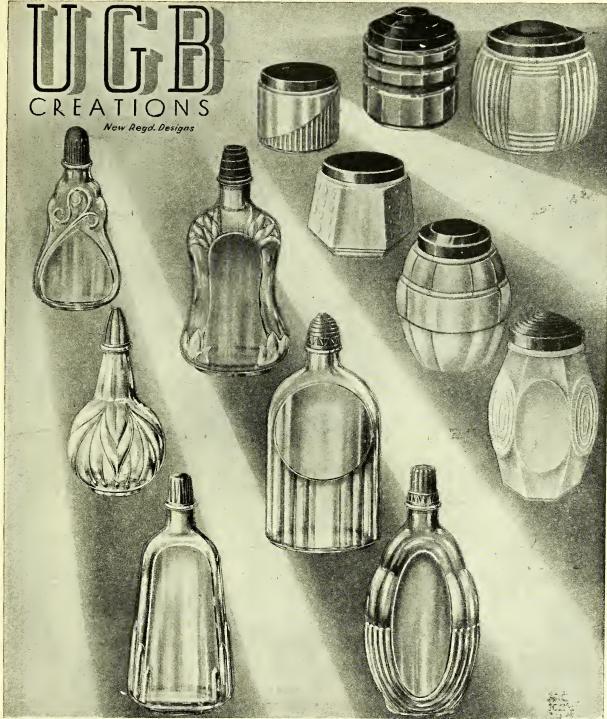
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HAIR GROWER & TONIC

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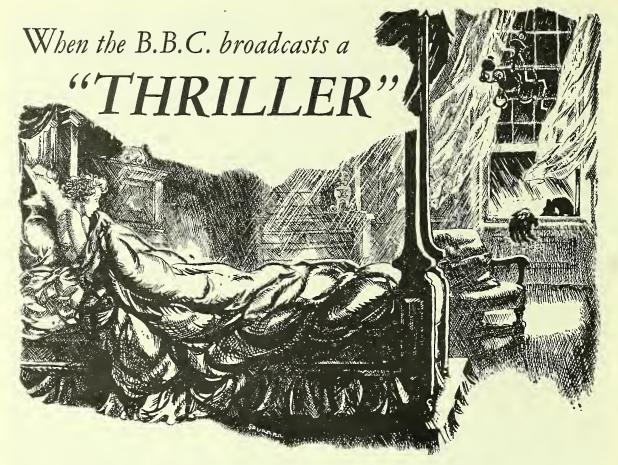
THESE new registered designs of Opal Pots and Bottles for tollet preparations, complete with moulded Korkalite closures are examples of the work of U.G.B. expert designers—CREATIONS WITH APPEAL AND CHARM yet within the requirements of modern automatic machine glass container manufacture. We welcome the opportunity of assisting you in your packaging problems by evolving new and attractive designs such as are portrayed on this page.

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Castury's BOURN-VITA



The Protective Food

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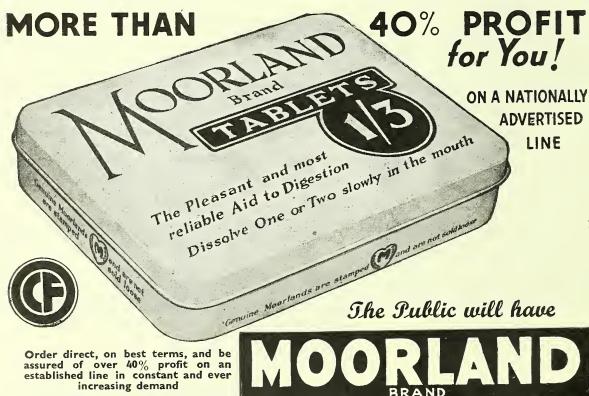
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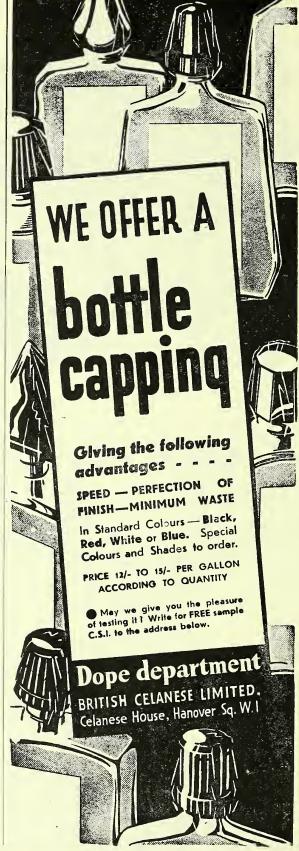
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EACH



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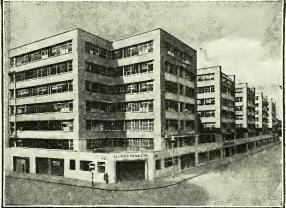
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HORSEFERRY ROAD, S.W.1

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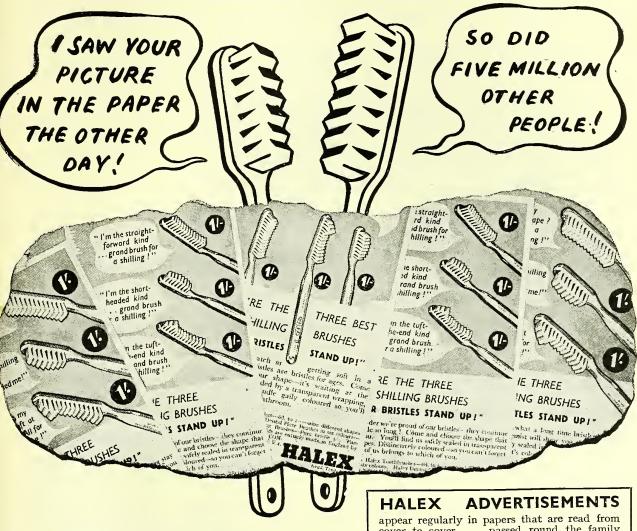
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PHONE : CLERKENWELL 3782-3-4



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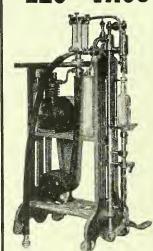
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Rejected
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Self Rinsing

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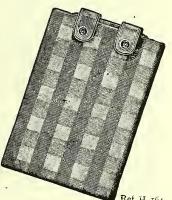
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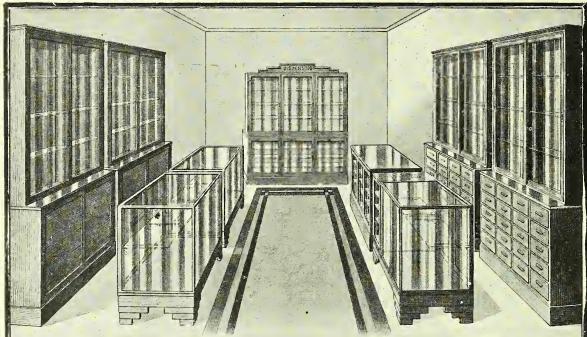
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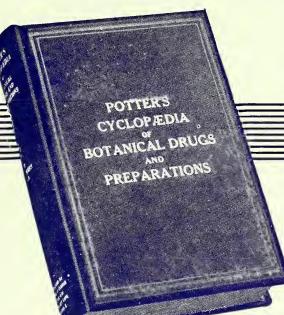
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INTERMEDIATE B. PHARM. (LONDON) EXAMINATION.

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are held for students who require to take a Preliminary Course previous to either the Preliminary Scientific or Chemist & Druggist Course. A PART-TIME COURSE is held on WEDNESDAYS for Qualified Pharmacists wishing to take the DIPLOMA in BIOCHEMICAL ANALYSIS.

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The Technical College, Sunderland.

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Session 1937-8

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SCHOOL OF PHARMACY

Officially approved by the Pharmaceutical Society and the University of London.

SESSION 1937-8

Commencing on Tuesday, 21st September, 1937.

STAFF.

HEAD OF DEPARTMENT OF PHARMACY: Henry B. Mackie, B.Pharm. (Lond.), Ph.C.

PHARMACEUTICAL CHEMISTRY:

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PHARMACOGNOSY:

Miss Mary E. Stevens, B.Pharm. (I,ond.), Ph.C., Silver Medallist of the Pharmaceutical Council.

PHYSIOLOGY :

George V. Whittenbury, M.Sc. (Manch.).

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(for Chemists and Druggists and those of C. & D. standard).

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The Session starts September 14th, 1937. Further particulars may be obtained from the Principal.

UNIVERSITY OF LEEDS

COURSES OF STUDY IN PHARMACY

Courses are held at the University in preparation for the Pharmaceutical Chemist and the Chemist & Druggist Qualifying Examinations

Particulars of the Courses may be obtained from

THE REGISTRAR,
THE UNIVERSITY, LEEDS

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This course is identical with the Intermediate B.Sc. Course in Chemistry, Physics and Biology. Students are recommended to enter for the University Intermediate B.Sc. Examination which, if passed, carries with it exemption from the Preliminary Scientific Examination. A student can then decide to take either a further year for the C. & D. qualification or two years for the B.Sc. degree,

THE CHEMIST AND DRUGGIST AND PHARMACEUTICAL CHEMIST COURSES

These are open to students who have passed the Preliminary Scientific Examination or its equivalent. The nine months' Course for the Chemist and Druggist Qualifying Examination commences in October each year. Composition Fee: 30½ Guineas per session. A two years' Course for the Pharmaceutical Chemist Qualifying Examination commences in October each year. Composition Fee: 20½ Guineas per Session, plus deposit fees.

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Courses in Pharmacology and in the Chemistry and Microscopy of Drugs are arranged for the Fellowship Examination of the Institute of Chemistry in Branch (E)—The Chemistry (including Microscopy) of Foods and Drugs and Water. A course in Biochemical Analysis preparing for the Diploma Examination of the Pharmaceutical Society in this subject is held on Wednesday afternoons.

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The Session commences on October 7th

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Residential facilities are available for both men and women students in Halls of Residence.

Residential fees covering three terms £68 to £75.

Detailed Prospectus of the course may be obtained on application to the Registrar.

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PHARMACY COURSES

SESSION 1937-38

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in Biology, Chemistry and Physics preparing for the Preliminary Scientific Examination of the Pharmaceutical Society, under the new regulations

Classes commence September 14th, 1937
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PART-TIME COURSE

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Classes commence September 21st, 1937 Fees £3-3-0 per session

Prospectus may be had on application to the College

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Bradford Technical College

DEPARTMENT OF PHARMACY

Fees for Full Courses for the

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Pharmaceutical Chemist Qualifying Examination - 20 Guineas per Session

Bachelor of Pharmacy (University of London) - 17 Guineas per Session

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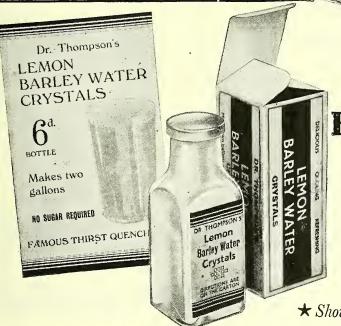
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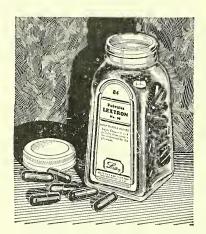


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News of the Week

Customs Tariff Modification, Sweden

Royal Decrees dated June 18, 1937, provide for modifications of the Swedish Customs Tariff, with effect as from July 1, 1937, upon iodine containing spirit. The rate of duty has been raised from 40 to 350 Kr. per 100 kg.

Key Industry Duty Representation

A representation has been made to the Board of Trade under Section 10 (5) of the Finance Act, 1926, regarding pyridine distilling not less than 90 per cent. between 113° and 117° Centigrade. Any communications arising out of this representation should be addressed to the Principal Assistant Secretary, Industries and Manufactures Department, Board of Trade, Great George Street, London, S.W.I, not later than August 21.

Imports Into Belgium

As a result of clearing and other agreements concluded by Belgium with certain countries, goods specified in a list published by the Belgian Government must be accompanied with a certificate of origin in prescribed form inscribed on the invoice. The list includes sponges; plants and parts of plants used in medicine; magnesite (carbonate of magnesia, lemolite or dolomite), in the natural state; witherite (carbonate of baryta); natural crude potash salts, even crushed or ground (carnallite, kainite, sylvanite and the like); liquorice juice, pure; wines prepared with aromatic plants, cinchona or other medicinal substances, or having been prepared for the manufacture of sparkling wine, not testing more than 21 degrees by the Gay-Lussac alcoholometer, at a temperature of 15 degrees Centigrade; mercury; calcium carbide; potassium sulphate; artificial plastic materials with a base of casein, gelatin, starch, gum tragacanth, or other similar materials. Full details are given in circular G 30716/37, published by the Department of Overseas Trade, 35 Old Queen Street, London, S.W.I.

Proprietary Articles Trade Association

We have been notified by the Proprietary Articles Trade Association, 43 Gordon Square, London, W.C.I, of the following alterations to the Protected List. The retail and wholesale prices quoted are the minimum selling prices fixed by the manufacturers and protected by the P.A.T.A.:—

Additions.—F. C. Calvert & Co., Ltd.: Dento phenolene, 6d., 4s. 6d. dozen; 1s., 8s. 6d. dozen, subject to usual quantity discounts. International Laboratories, Ltd.: Vervus (Cough and Cold Remedy), 1s. 3d., 11s. 3d. dozen. A. F. Sherley & Co., Ltd.: Cat Condition Powders, 6d., 4s. dozen; 2 dozen, 3s. 9d. dozen; 1s. size, 8s. dozen; one dozen, 7s. 6d. dozen. Orders for this product may be included in £2 parcels on which retailers receive a discount of 2½ per cent. and a further 5 per cent. for window display. The Dr. Singha Co.. Ltd.: Dr. Singha (brand) Catarrh Jelly, 1s. 6d., 13s. dozen; bonus of 13 to dozen on complete dozens.

Deletions.—3s. size Dr. Singha (brand) Catarrh Tablets, 3s. size Dr. Singha (brand) Catarrh Jelly, 6s. size Dr. Singha (brand) Duo Catarrh Treatment.

Inquests

At Hampstead, London, N.W., Mrs. S. L. Williams, Linstead Street, committed suicide by taking 100 aspirin tablets "while the balance of her mind was disturbed."

A verdict of "Accidental death" was returned at Stafford, recently, at an inquest on the body of a child aged two. It was stated that the mother had given the child two pills from a tin; the tin afterwards fell on the floor and the pills scattered. The child found one and tried to swallow it, but the pill got lodged in its larynx.

At Redruth, recently, an inquest on the body of Richard Hocking, Model Farm, Treskillard, was concluded. The coroner said he had previously adjourned the inquest for a chemical examination of certain organs. A medical witness stated that a superficial examination failed to reveal the cause of death, and it was later found that the deceased had been taking medicine which he had purchased from a vendor at Redruth Fair. The chemical examination revealed that death was due to natural causes. An analytical examination of the medicine which deceased had purchased at the Fair—"I understand it was supposed to cure all evils," remarked the coroner—showed that it was "merely quinine and water." Quinine, for a man in the deceased's condition, aggravated his symptoms. The coroner recorded a verdict in accordance with the medical evidence.

Miscellaneous

AIR RAID PRECAUTIONS HANDBOOK,—Air Raid Precautions Handbook No. 3, dealing with the medical treatment of gas casualties, has been issued by the Home Office, and is obtainable (price 6d.) at H.M. Stationery Office.

FOOD AND DRUGS (ADULTERATION) ACT, 1928.—At Blackpool Police Court, on August 6, William Chadwick, Durham Road, was fined 20s., with 13s. 3d. analyst's fee, for selling vinegar not of the required quality. It was stated that malt vinegar was asked for by an inspector, and the public analyst reported the sample did not contain more than 10 per cent. of malt vinegar. The defendant said the firm from whom he purchased the vinegar led him to believe it was "pure malt."

SUNDAY DISPENSING IN WALSALL.—On and after August 15 chemists in Walsall will discontinue the Sunday opening of their shops. By arrangement with the Walsall Pharmaceutical Committee special arrangements have been made enabling the public to get urgent National Health Insurance

the public to get urgent National Health Insurance prescriptions dispensed and medical necessaries supplied. Each week - end every chemist in the borough will exhibit a notice indicating

CONTENTS See p. 185 where the public will be able to have urgent medicines dispensed.

Government life annuities.—The National Debt Office, 19 Old Jewry, London, E.C.2, announces that under Section 33 of the Finance Act, 1937, the commission of 2s. 6d. per cent. heretofore charged where an annuity is purchased for cash is abolished, and the period allowed for completion of purchase is increased to a maximum of fifteen days. Full particulars of the arrangements for the grant of single and joint life annuities without limit of amount, for cash or in exchange for Government stocks, may be obtained from the Department.



Cephos stand by Cephos, Ltd., Blackburn, at Royal Lancashire Show, Manchester.

Irish Notes

Irish Free State D.D.A. Regulations

The Irish Free State Minister for Justice has issued the Dangerous Drugs (Raw Opium, Coca Leaves and Indian Hemp) Regulations, 1937 (S.R. & O., 1937, No. 64. Government Publications Sale Office, 5 Nassau Street, Dublin, C.2, 6d.). The substances covered in the Regulations are raw opium, coca leaves, Indian hemp, resins obtained from Indian hemp, and all preparations (except extract or tincture of Indian hemp) of which such resins form the base. Provision is made for the import, export, possession, sale and distribution of these substances. The Regulations revoke (a) the Regulations of May 20, 1921, made under Section 3 of the Dangerous Drugs Act, 1920; (b) the Dangerous Drugs (Marking of Raw Opium for Exportation) Regulation, 1922, made under Section 1 (2) of the same Act.

Insurance Act Dispensing

Lancashire.—The clerk to Lancashire Insurance Committee spoke on medicine consumption in Lancashire at a Clitheroe meeting on August 5. He said that in 1916 Lancashire insurance practitioners issued to patients 1,500,000 prescriptions, costing £42,000. Last year the prescriptions increased to 3,800,000, costing £130,000. An insured person was entitled to a world-wide range of drugs at the discretion of the doctor. One person received oxygen value £64 in fourteen days,

One person received oxygen value £64 in fourteen days, another 621 morphine tablets costing £27. A third had so far received 1,044 lb. of ointment, costing £136. Since 1912, Lancashire Committee had spent over £2,000,000 on drugs and appliances. Mr. Speed denied that doctors were "more or less compelled" to submit to the demands of insured persons, who might otherwise transfer "affections" and fees elsewhere. Evidence showed that when a panel list exceeded 2,000 the average cost of "physicking" steadily increased. A newly qualified doctor ordered more expensive drugs, and the frequency of his prescribing was considerably higher. The most disturbing element was the growing tendency of insured persons to visit doctors at the first sign of trivial complaints. Many doctors in the county were attending half the total of their insured persons each quarter. When the insured population would reach its absorption point of medicine taking no one could foretell. One doctor ordered charcoal biscuits for an insured patient.

An average dose of charcoal was from 40 to 60 gr., and it was found that to obtain one medicinal dose the patient would have to eat fifty-three biscuits after every meal. Was all this drugging necessary?

Portsmouth.—A test case before the Portsmouth Insurance Committee showed that a prescription for mist. pot. brom. et valerian. contained too much pot. brom. (193 gr. instead of 160 gr.). The chemist was unable to account for the excess, and his analyst's report confirmed that of the Committee's analyst. The decision of the Committee was to issue a warning.

Sussex (West).—At a recent meeting of the Insurance Committee, the Pharmaceutical Service Subcommittee reported on several cases of alleged discrepancies in dispensing. Mr. Pilcher instanced one case in which a chemist was fined £2 2s., saying that there were five previous cases against the respondent, and he thought it was a "light get off." He moved an amendment that the penalty be increased to £3 3s. This was seconded, and supported. Mr. Pilcher's amendment was, however, lost.

Topical Reflections

By Xrayser

Congratulations

on your issue No. 3000 (p. 153). The production of 3,000 successive numbers of The Chemist and Druggist, which includes many "specials," is a gigantic task. There are no doubt those with an itch for figures who could tell us how many miles of paper have been used and how high the copies would reach when piled the one on the other. I am, however, struck with the great service rendered to pharmacy by the editors and publishers, backed by an imposing list of correspondents. My own recollections of the C. & D. go back to the late 'eighties. It was always read by my apprentice master from cover to cover. After he had finished with it I began to read it, keeping a note book in which I recorded many of the formulas to be found in its pages. I recall many hours (stolen, I am sorry to say, from my usual work) when, seated on the top of a pair of steps in the warehouse, I studied the pages of back editions which had been carefully stored in bundles for reference. There was less pharmaceutical literature available to the apprentice in those days than there is now, and there is no doubt that the C. & D. formed the chief pabulum on which its young readers were nourished. Here's to No. 4000!

A Letter on Prescription Pricing

with which I am in thorough sympathy appeared on p. 171, signed "Levellit." There is no logical reason why minimum prices for prescriptions should be any more difficult to obtain than minimum prices for proprietaries. It is a matter of good will and loyalty on the part of all pharmacists. I have before, in this column, drawn attention to the urgent necessity for elaborating a system whereby a script is priced at the same rate by pharmacists in different parts of the country. What is required is simultaneous action by all associations, who in a pre-arranged month would discuss the subject and take appropriate action. The chances of achieving success are good, and the time of growing overheads is a suitable one for starting such a scheme. As associations will this winter be formulating a code of pharmaceutical ethics as an ideal to work to, it would not be difficult to include the question of dispensing fees in the consideration of such a code. N.H.I. dispensing will grow and at fees which may be poor; all the more necessity for getting fees for dispensing, other than N.H.I., which are reasonable and, above all, are the same all over the country.

pharmaceutical exhibit at Oublin





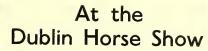












There was a good display of pharmacentical and toilet products at the Industrial Exhibition held in connexion with the recent Dublin Horse Show. The photographs reproduced on this page are those of (1) James Crean & Sons, Ltd.; (2) Lennox Chemicals, Ltd.; (3) Jeyes' Sanitary Compounds Co., Saorstat Eireann, Ltd.; (4) Hamilton, Long & Co., Ltd.; (5) Day, Son & Hewitt (Ireland), Ltd.; (6) Roche & Co.; (7) Irish Glass Bottle Co., Ltd.; (8) Irish Signs, Ltd.; (9) Irish Pharmaceuticals, Ltd.; (10) Kolynos (Sales), Ltd.; (11) Dixon & Co.









Company News

P.C. means Private Company and R.O. Registered Office

Scottish Medical Peat Company, Ltd. (P.C.).—Registered in Edinburgh. Capital £250. Objects: To carry on the business of manufacturing chemists, druggists, general merchants, etc. Alastair Maclean, 93 Hope Street, Glasgow, C.2, and Peter McGilligan, 31 St. Vincent Place, Glasgow, subscribers. The first directors are not named.

Fido's Products, Ltd. (P.C.).—Registered August 5. Capital fido. Objects: To carry on the business of dog food manufacturers, producers of foods and medicines for animals and birds, etc. John H. Davies, 63 St. Margarets Road, Twickenham, Middlesex, and Frederic Potter, 48 Newry Road, St. Margarets, Twickenham, Middlesex, permanent directors. R.O.: 69 Moorgate, E.C.2.

NORTHAM WARREN (I.F.S.), LTD. (P.C.).—Registered in Dublin. Capital £3,000.—Objects: To carry on the business of wholesale and retail dealers in manicure preparations, apparatus and instruments, etc. Armar J. Donnell, 49 St. Helen's Road, Booterstown, co. Dublin, Arthur M. Johnson, 23 Great Ship Street, Dublin, and Northam Warren, 191 Hudson Street, New York, directors.

Northern Animal Medicine Supply Co., Ltd. (P.C.).—Capital £1,000. Objects: To carry on the business of consulting, analytical, manufacturing, agricultural and general chemists, herbalists and seedsmen, etc. Wm. L. Robson, High Chesterhope, West Woodburn, Northumberland, and Thomas Readman, Inglenook, Bretton Gardens, Benton Hall Estate, Northumberland, directors. Solicitors: L. C. and H. K. Lockhart, 20 Fore Street, Hexham.

VIV PHARMACEUTICALS, LTD. (P.C.).—Registered July 29. Capital £2,000. Objects: To acquire the business of a manufacturer and vendor of the pharmaceutical preparation "Viv" for the dispersal of varicose veins and related disorders, carried on by S. Arthur Richardson at 48 Andover Road, Winchester. Stanley A. Richardson, 68 Hatherley Road, and Bertram J. Starling, Winton Lea, Andover Road, Winchester, directors. R.O.: 18 Swan Lane, Winchester.

Bennetts (Burton Latimer), Ltd. (P.C.).—Registered August 9. Capital £100. Objects: To acquire the business carried on by Ivy E. Bennett at Burton Latimer and to carry on the business of chemists, druggists, etc. Mrs. Ivy E. Bennett, 102 High Street, Burton Latimer, Northants, Mrs. Ellen Binley, 111 Hawthorn Road, Kettering, and Mr. Fred Evelyn, 102 High Street, Burton Latimer, Northants, directors. R.O.: 102 High Street, Burton Latimer, Northants.

ARDENTE, LTD. (P.C.).—Registered August 7. Capital £1,000. Objects: To carry on the business of manufacturers of and dealers in acoustic instruments, electrical apparatus, surgical, optical and scientific instruments, patent medicines, etc. Albert D. B. Marizzano, 19 Hanover Buildings, Regents Park, N.W.1, and Miss Ayliffe P. Walsh, Fanningstown, Hillside, Banstead, Surrey, subscribers. The first directors are to be appointed by the subscribers. Solicitors: Nickinson & Co., 42 Bedford Square, W.C.1.

ELIZABETH HELBURN (ENGLAND), LTD. (P.C.).—Capital £2,000. Objects: To carry on the business of manufacturers of and dealers in perfumery and toilet preparations, chemists, druggists, hairdressers, beauty parlour proprietors, manufacturers of and dealers in boxes, receptacles and wrapping materials, etc. The first directors are Harrison J. St. Clair (permanent director and chairman), Gerald Lawrence, Bernard Lomnitz and Lotte Kick. Solicitors: Bernard Simmons & Co., 54 Finsbury Pavement, E.C.

Sundries Manufacturing Co., Ltd. (P.C.).—Registered August 6 in Edinburgh. Capital £100. Objects: To carry on the business of manufacturers and importers of, agents for and dealers in all chemical, pharmaceutical, medicinal, industrial, sanitary, toilet and other preparations, etc. A. M. Macphie, Kirkton, Dumbarton, Wm. A. Duncan, Lynholme, Nethermains Road, Milngate, C.A., Jas. S. Macphie, Glenmar, Dumbarton, and Jas. G. Woolley, 20 Craigwell Avenue, Burnside, Rutherglen, directors. R.O.: 90 Mitchell Street, Glasgow, C.I.

Kohl's Scientific Instruments, Ltd. (P.C.).—Capital £3,100. Objects: To acquire from the Fritz Kohl G.m.b.H., of Leipzig, the right to use their trade mark throughout the world, (2) from Dr. Fritz Kohl the licence for the whole of the British Empire to make, purchase and sell the Roll-Splint and the Kohl Recording Machine and (3) the services of Dr. Fritz Kohl with the benefit of his scientific knowledge; and to carry on the business of manufacturing, purchasing and selling medical, surgical and scientific apparatus and instruments of all kinds (including such as are applicable to the cinema, wireless and television), surgical rubber appliances, fine chemicals and photographic apparatus and accessories, etc. Fritz Kohl, 23 Ranulf Road, Childs Hill, N.W.2, and Arthur H. Riches, 55 Homestall Road, Honor Oak, S.E.22, directors. R.O.: Plantation House, 34 Fenchurch Street, E.C.3.

Macleans, Ltd.—A profit of £266,259 for the year ended June 30 is reported, compared with £182,345 in the previous year. A sum of £8,317 (against £7,500 in the previous year) has been transferred to capital redemption reserve and £15,208 (against £13,404) to tax reserve. £50,000 has been placed to general reserve, and £19,170 (against £20,840) has been carried forward. Ordinary dividend has been paid at the rate of 20 per cent. (10 per cent. last year), the final distribution being 12½ per cent. The investment in Fynnon, Ltd., is stated by the directors to have added a substantial new source of revenue.

Private Arrangements

Arthur John Gait, wholesale chemists' sundriesman, trading as Gait, Barnes & Co., 67 Peckham Rye, London, S.E.15. A meeting of the creditors was held on August 6. The statement of affairs showed liabilities of £1,983, made up as follows: Trade creditors, £644; expenses, £12; cash claims, £1,326. In addition there were fully secured creditors for £100. The assets were estimated to realise £517 (net £510), a deficiency of £1,472. The deficiency was attributed to a debit balance on the last balance sheet of £1,136, and to the writing down of the assets. It was understood that the debtor commenced trading in partnership on May 22, 1934. No formal partnership agreement was entered into but the business was registered. The commencing capital was £200, all of which was introduced by the debtor, who subsequently brought in further amounts. During the twelve months to May 1935, the turnover was £1,674, with a net loss of £804. In the following twelve months the sales increased to £3,076, but there was a net loss of £316. During the year to May last the turnover still further increased to £4,840, but there was a net loss of £169. The drawings had been negligible. On April 23 the partnership was dissolved and since that date the debtor had traded alone. The outgoing partner received nothing for his share of the business, and the debtor undertook to discharge the whole of the liabilities and took over the assets. The dissolution was duly gazetted. Between June 1 and July 30 of the present year the sales were £464, with a net loss of £166. It was decided that the matter should be dealt with under a deed of assignment. A trustee and a committee of three creditors were appointed. The creditors include: R. Bailey & Son, Ltd. (£12); Burgoyne, Burbidges & Co., Ltd. (£33); Gale, Baiss & Co., Ltd. (£196); Howards & Sons, Ltd. (£35); Purfinol, Ltd. (£86); Veno Drug Co., Ltd. (£551).

Bankruptcy Reports

Re Wynn Rees, chemist and druggist, 7 Grand Parade, Kingsbury Road, Kingsbury. The statutory first meeting of creditors was held on August 5 before the Assistant Official Receiver at London Bankruptcy Buildings. The debtor started business on his own account in 1931, obtaining a twenty-one years' lease of 7 Grand Parade, Kingsbury. As capital he had £515 of his own and £500 borrowed from relatives. A statement of affairs had been lodged showing assets £1,205, from which had to be deducted £209 for payment of preferential claims, leaving £995 to meet unsecured debts of £1,243. Mr. Parkin S. Booth was elected trustee to wind up the estate.

Fairchild Scholarship and Prizes

THE 1937 examination for the Fairchild scholarship and prizes was held on June 16 at the following centres:—
Cardiff (supervisor, Mr. Rees Vernon Lloyd, B.Ph.,
Ph.C.); Edinburgh (supervisor, Mr. Peter Boa, Ph.C.); London,
(supervisor, Miss Maddock); Manchester (supervisor, Mr. T.
Miller, M.P.S.). Twenty-six candidates complied with all the Miller, M.P.S.). I wenty-six candidates complied with all the conditions and sat for the examination, of whom twenty-three represented England, two represented Wales and one represented Scotland. Questions for the examination were set and assessed by:—Mr. Harry Brindle, B.Sc., F.I.C., Ph.C. (chemistry and physics); Mr. Peter Boa, Ph.C. (practical pharmacy and prescription-reading); Mr. T. Marns, M.P.S. (business knowledge and sale of poisons); Professor J. Small, D.Sc., Ph.C. F.R.S.E. (botany and pharmacognosy).

Ph.C., F.R.S.E. (botany and pharmacognosy).

The following awards were made:—Mr. Christopher W. Cosstick received the highest marks, 377 out of a possible 500, and was awarded the scholarmann and the scholarmann and the scholarmann are stronger for the scholarmann and the scholarmann and the scholarmann are stronger for the scholarmann and the scholarmann are stronger for the scholarmann and the scholarmann are scholarmann and the scholarmann and the scholarmann are scholarmann.

marks.

MR. C. W. Cosstick

ship, value £60. The prize for England went to Mr. Kenneth L. Exley. The prize for Wales went to Mr. Albert W. Austin. No award could be made for Scotland, as the minimum marks were not obtained. There was no entry this year from Ireland. Out of the twenty-six candidates who entered for the examination, eighteen received over 50 per cent. of the total

Mr. Christopher W. Cosstick, 454 Hanworth Road, Hounslow, was apprenticed to Mr. T. Marns, M.P.S., 22 The Green, Ealing.

Mr. Kenneth L. Exley, "The Nithsdale Crescent, Corner," Harborough, Market apprenticed to P. Jeyes & Co.,

Ltd., Church Street, Market Harborough.

Mr. Albert W. Austin, 10 Harrow Road, Newport, Mon.,
was apprenticed to Mr. J. Edwards, M.P.S., 90 Chepstow
Road, Newport.

The following is the text of the papers:—

CHEMISTRY AND PHYSICS (Time allowed—two hours)

(Use equations where possible to represent chemical reactions)

(1) Describe the principles underlying the construction and use

of a potentiometer. Give an account of two uses of a potentiometer.

(2) Explain carefully what is meant by the term "critical angle" of two media. Briefly describe some common phenomena which are due to total internal reflection, using diagrams to illustrate the

(3) What do you understand by "normal solution" in reference to volumetric analysis? In your answer make use as far as you are able of the following substances as illustrative examples:—(a) Sulphuric acid; (b) phosphoric acid; (c) potassium permanganate; (d) sodium thiosulphate; (e) chromic anhydride; (f) ferrous sulphate. Explain how the proportions of oxalic acid and potassium acid explanations are acceptable to the control of the cont acid oxalate may be determined volumetrically in a solution con-

taining both.

(4) What is the chemical composition of the following substances:—(a) Calomel; (b) white precipitate; (c) red precipitate; (d) corrosive sublimate; (e) red iodide of mercury? Give briefly one method for the preparation of each. What is the effect of heat and the action of caustic soda, if any, upon each of the above

substances? (5) Assume the empirical formula of a substance to have been determined as CH₂O. Describe in general terms what further steps should be taken to assist in the identification and the determination of the constitution of the substance.

> PRACTICAL PHARMACY AND PRESCRIPTION-READING (Time allowed—one hour and a half)

(1) (a) Camphorated tincture of opium. (b) Solution of strychnine hydrochloride.

Fresh infusion of digitalis. (d) Simple solution of iodine.
(e) Oleated mercury.

Describe in detail the official directions for preparing the above. Mention the ingredients and the proportion of morphine in (a);

state what is contained in (b); indicate the relative potency of (c) compared with the tincture. State percentage of iodine in (d); and say how you would describe the strength of (e).

(2) Describe the official general directions for preparing suppositories when employing oil of theobroma as the basis.

(3) State in imperial measure the equivalent of 1 litre and a millilitre; and the metric equivalent of a fluid drachm and a fluid

(4) Describe the official process for preparing aromatic waters by solution.

(5) Render in English the following prescriptions and write the directions in appropriate terms:-

Pulv. rhei Sodii bicarb. gr. ij. .. gr. 1

Sig.:-Capiat. unam bis die post cibuin. Mention excipient selected.

Business Knowledge and Sale of Poisons (Time allowed—one hour).

(1) (a) What percentage of gross profit does a chemist usually anticipate to make? How would you calculate this figure in order to satisfy yourself that your profits were up to expectations?

(b) If you borrowed £75, firstly in which book would you enter the same, in which ledger and on what side would it appear when posted?

(2) Enter the following in a five-column cash book: 1937 Jan. 1. Balance at bank Paid for goods purchased on credit from G. Jones 28 7 Discount allowed Rent received ... Salaries ... Cash sales ... Paid rent ... Travelling expenses ... 60 10 85 0 0 .. 10 0 0

Assume all cash and cheques were banked daily. Bring down the balance as at January 9, 1937.

(3) What is the difference between Part I poisons and First Schedule substances? How would you treat a substance in Schedule

(4) How would you label:—

(a) A liniment containing a poison.

(b) Syrup. Eastoni.(c) Thyroid tablets.

What restrictions apply to lobelia, barium salts and ammonia?

Botany and Pharmacognosy (Time allowed—one hour)

(1) Write a brief account of the general features of a green foliage leaf, and indicate the variations shown in the pharmacopæial "leaves," with special reference to belladonna, hyoscyamus, digitalis, buchu and senna.

(2) Describe, with large-scale drawings, the typical structure of the fruit of Umbelliferæ, with notes on the characteristic features shown by the umbelliferous fruits in common use.

(3) Write a short essay on the lower plants which are used in

THE sketches of Liverpool which were used on the menu at the Conference banquet were greatly admired by, and presented to, the Lord Mayor, Alderman W. Denton, and not as stated in our issue of July 31.

Manesty Machines, Ltd., manufacturers of automatic water stills and tablet-compressing machines, have removed from Manesty Buildings, College Lane, Liverpool, 1, to their new works at Speke Hall Road, Liverpool, 19. Telephone: Garston 1511. Telegrams: "Manesty Liverpool."

Eighteenth-Century London Chemists

A various times London chemists of the eighteenth century have been mentioned by name in connexion with one or other of the phases of pharmacy in that period. As we have had occasion to remark, the line of demarcation between the wholesaler and the retailer was not so definite then as it has since become, and the wholesale side of the business, in the majority of instances, grew by a natural process of development from the retail. It has occurred to us that lists of (a) chemists and (b) chemists and druggists mentioned in the news and advertisements of the Press of that century may be of interest, and we subjoin both lists. Those marked with an asterisk were probably apothecaries as well.

Chemists

Name	Address	Date
Alexander, Thomas	Long Acre	1762
	T 1441 CD TYPE	1763
Dalam 337-16	Little Tower Hill	1776
	Whitechapel	1748
Barry, Robert	Whitechapel	1740
Bartlett, –	Bishopsgate Street	1769
Bartlett, – Bevan, S. & T	Lombard Street	
Blake, –	Borough	1749
Bright, Edward	White Friars	1772 1712
Bromley, –	White Friars Borough	1772
Browne, John, F.R.S	Old Fish Street	1727
Buckett, John, & Beever,	Upper Thames Street	1766
Henry.	opper rindings Bereet III	1,00
Cante,	Dartmouth Street	1745
Carter, Robert	Haymarket	1740
Chalkstone, Mark	Oxford Street	1773
Chamberlain & Moore	Fleet Street	1774
	Show Hill	1740
	Holborn	1748
Clark(e), John	Holborn Barbican	1757
Clardon, — Clark(e), John Clutton, Joseph	(High) Holborn	1742
Corbyn & Brown	(High) Holborn	1772
Curtis, Francis	Holborn	1754
Dalmahoy, – Downing, A Edwards, Thomas	Ludgate Hill	1764
Downing, A	Hand Alley (Bishopsgate)	1708
Edwards, Thomas	Fetter Lane	1710
Elliot, – Ellison, –	Broad Street, Holborn	1776
Ellison, –	Whitechapel	1766
Fernyhough,	Snow Hill	1772
Grant,	(?) Dartmouth Street,	
	Westminster	1763
Griffin, William	–	1736
Hanckwitz, Ambrose	(1) Earl's Court }	1707
Godfrey	(2) Southampton Street \int	1/0/
Hanckwitz, John Godfrey	Southampton Street	1741
Hayle, — Henry, Peter	Holborn	1753
Henry, Peter	Holborn Bride Lane Snow Hill	1734
Hodgson, Robert	Snow Hill	1779
Houlton, Samuel		1754
Hubert, :	Strand Clare Market	1763
Hudson, J. (or T.)	Clare Market	1768
Huggett, – Jackson, H. (& Co. 1755)	Swallow Street	1750
Jackson, II. (& Co. 1755)	East Smithfield	1744
Jackson, James	Woodstock Street	1768
Jay, – Johnson, Alexander	T3 1 1 01 1	1744
Johnson, Alexander	YY 11	1738
Keen, Messrs Kent, Thomas	111	1775 1760
Kinloch, William, & Smith,	117 (0 1/1 0 1/1	1758
Henry	West Smithheld	1/50
Lambertson,	107 Oxford Street	1773
I'Octormon		1764
Le Swan, –	Great St. Andrew Street	1752
Le Swan, —	Coventry Street	1752
Lowdon,	(? Red) Lion Street,	-/5-
	Holborn	1769
Lowe,	Leadenhall Street	1753
Marsden,	Southwark	1774
,		,,,

Name		Address	Date
Maud, John		Aldersgate Street	1731
Maxwell,		Fleet Street	1766
Migley (or Midgley)		Watling Street	1739
Minish, William		Whitechapel	1776
Moult, George		Old Fish Street	1727
Mouncy,		Great Russell Street	1754
Moxey,		Catherine Street, Strand	1775
†Pack,			1744
Parker,		Paternoster Row	1777
Payne,		Princes Street, Haymarket	1764
Pinder,		Borough	1754
Pead, Jonathan		New Street Square	1730
Pead & Smith		Hatton Garden	1738
Porter,		_	1748
Potter, John		Bartholomew Close	1725
Primate, Nathaniel		Aldersgate Street	1739
Probart, –		Old Street	1744
Pyeson, Charles		Thames Street	1773
Richardson, –		Holborn	1745
Sarfati,		Little Britain	1726
Shaw,		Tooley Street	1738
Shelburn, –		Brewer Street	1767
Smith, –		Broad Street	1738
Smythe, –		Little St. James's Flace	1777
Spark,		New Street, Cloth Fair	1774
Spilsbury, Francis	• • •	Mount Row, Westminster	1774
Staveley, –	• • •	Fenchurch Street	1776
Straton, –	• • •	West Smithfield	1753
Stuart, Robert	• • •	Duke's Place (Aldgate)	1707
Tahourdine & Moore	• • •	87 Fleet Street	1772
Talbot,	• • •	Bishopsgate Street	1771
Townshend, Thomas	• • •	Haymarket	1756
Tufton & Thornburgh	• • •	Minories	1742
Usher, John	• • •	Strand	1748
White,	• • •	West Smithfield	1764
Whitmore, George	•••	AT TITE	1754
Willis,	• • •		1775 1686
Wilson, George		\int Watling Street	1707
Wilson, J		Well Yard Strand	1760
Winch, Robert	• • • •	Strand	1772
Wormby, –		Rider Street	1745
Yarwell (Dr.) & Collear		Fullwood's Rents, Holborn	1758
Tarwell (Dr.) & Collean		L diff ood 5 Helits, Holborn	-150

† Chemist and Perfumer.

Chemists and Druggists

Name	Address	Date
*Arthur, Daniel Baker, — Barnesly, Henry Barnett, Vincent Bartlet, — Board, R Bulkeley, Messrs. Burrough, — *Campion, — *Cross, Thomas Cundel, — Darby, — Darling, — *Doyle, Philip Ellison, — Figges, — Hardie, John *Harris, Robert, & Marsden, Thomas	Watling Street Clare Street Leadenhall Street Throgmorton Street Gracechurch Street (?) Fleet Street Long Acre Wood Street Holborn Minories (High) Holborn Welbeck Street (?) Hackney Clare Street Southampton Street, Strand. St. Paul's Churchyard	1749 1752 1773 (?)1745 1774 1761 1763 1753 1775 1770 1772 1757 1780 1769 1758 1775 1763

Name	Address	Date
Hearn(e), –	to The Minories	1771
Hodgson,	N. Charat	1753
Holmes,	Takkill Dialda	1777
Jacob, J	TO I CAN A TITUE	1772
Jolly,	Horslydown	1762
* Jones,	D . II Charat Carrat	1769
3 ,	Garden.	-/-3
King, Christopher	Haymarket	1766
Kirby, –	Ct M t TT'11	1778
*Knight,	Norton Folgate	1771
*Leaper,	D: 1	1750
Lingard, Henry	** 11	1769
May, Nathaniel	Aldersgate Street	1747
Moore, William, &	go Fleet Street	1774
Chamberlain, Samuel		, , ,
Newland, Mark	Tower Street	1752
*Palmer, Ludford	Barbican	1757
Parker, Jonathan, & Forster, Joseph	Whitechapel	1758
Pearce,	High Holborn	1775
Pindar, Simon		1742
*Potter, George, & Windl		1743
Thomas	i, madisgate street	1/43
*Radley, William, &	Holborn	1760
Durham, John	110120111111111111111111111111111111111	1 -/00
Redmain,	Whitechapel	1757
Sharp, Petcr		1768
*Siddall, Richard, & Swar		1753
Daniel Daniel	.,	- 133

Name	Address	Date
*Silvester, Speed, Richard & Thomas Stallard, (?) Thomas *Taylor & Seymour Thornton, Robert *Timbrell, *Toovey, John *Towers, Thomas, & Dodsley, John *Viner, *Webb, *Willett & Harvey	86 High Holborn (1) Old Fish Street (2) 90 Cannon Street Leadenhall Street St. John Street Cannon Street Strand 15 Catherine Street, Strand. Fenchurch Street Holborn Fenchurch Street	1774 1773 1766 1774 1771 1755 1767 1772 1775

Those whose names are marked with an asterisk are regarded as being also apothecaries.

Several of the names are quite familiar to readers of The Chemist and Druggist. Some will be found in our Annual Special Issue of July 10, 1926. Among the best-known people are S. & T. Bevan, the predecessors of Allen & Hanburys, Ltd.; Joseph Clutton, who made a collection of materia medica now in the Museum of the History of Science at Oxford; Corbyn & Biown, afterwards Corbyn, Stacey & Co.; Dalmahoy, a frequent advertiser in the Press; the Hanckwitz (Godfrcy) family, associated with Robert Boyle; the Sarfatis, controversialists as well as chemists; Francis Spilsbury, the owner of several proprietaries; and George Wilson, author of "A Compleat Course of Chymistry."

London Chemists of 1837

HE fact that the coronation of their Majesties the King and Queen took place almost on the hundredth anniversary of the accession of Queen Victoria has directed attention to various aspects of life as it was lived a century ago, and such topics as the literature, drama and politics of the year 1837 have been the subject of discussion in the Press. We propose on this occasion to undertake the comparatively modest task of selecting from Robson's London Directory for that year the names of several representative chemists, whose businesses are in most cases still flourishing. The list is as follows:—

The list is as follows:—

Allen, Handbury [sic], & Barry, 2 Plough Court.

Alsop, Robt., 15 Sloane Square.

Beaufoy & Co., South Lambeth.

Bell, John, & Co., Oxford Street.

Blake, A., & Son, 47 Piccadilly.

Corbyn & Co., 300 High Holborn.

Croyden, Chas, 36 Wigmore Street.

Dakin, Tho., King William Street.

Decastro, Sam., 25 St. George's Terrace, Knightsbridge.

Dinneford, Chas., 172 New Bond Street.

Godfrey & Cooke, 31 Southampton Street and 30 Conduit Street.

Keating, Tho., 79 St. Paul's Churchyard.

Lamplough, Hen., 9 Gloucester Place, Islington.

Morson, T. N. R., 19 Southampton Row.

Potts, R. U., 55 South Audley Street.

Pyman & Bird, corner of Castle Street and Titchfield Street.

Redwood, Theop., 15 Crawford Street, Marylebone.

Reece & Co., 170 Piccadilly.

Rouse, Robt., 1 Wigmore Street.

Savory, Moore & Co., 220 Regent Street and 136 New Bond Street.

Smith, Joseph, 29 Haymarket.

Squire, Peter, 277 Oxford Street.

Starkie, Jas., 4 Strand.

Steedman, John, 5 and 6 Keens Row, Walworth Road.

Williams & Co., 5 Halkin Street West.

Winstanley, E., & Son, 7 Poultry.

This section of the Directory referred to comprises abou

This section of the Directory referred to comprises about 515 shops. Most of the businesses in the list we have given became known eventually as manufacturing or wholesale concerns, and as such were described in our Special Issues of July 26, 1913, and June 24, 1933. The remainder are of interest in other ways.

Annotations

Taking first the businesses which developed chiefly on the manufacturing or wholesale side, we begin with Allen, Hanbury & Barry, the victims of what is, as far as we have noticed, the only misprint in Robson's group. Barry had been taken into partnership by William Allen in 1818, and two of the Hanburys, who were Allen's nephews, in 1824. Barry appears to have been the first man to apply evaporation in vacuo to pharmaceutical products. One of the Hanburys mentioned, Daniel Bell, was the father of the more famous Daniel Hanbury, F.R.S., part author of "Pharmacographia." The other, Cornelius, died in 1916 at the age of eighty-eight.

The name of Beaufoy & Co. is not often associated in our columns with retail trade: there seems, however, to have been a business of this kind owned by the firm 100 years ago. Other examples of proprietors who gave up their shops sooner or later in favour of the manufacturing side of their businesses readily come to mind in glancing through the list; of such are Corbyn & Co., Thomas Dakin, Charles Dinneford, Thomas Keating, Henry Lamplough, T. N. R. Morson, and John Steedman.

The names of John Bell & Co. and of Charles Croyden are a reminder of the amalgamation that took place between the two businesses in 1908. During the year before the issue of this Directory of Robson's, John Bell had taken into partnership, on the termination of an existing agreement, Jacob Bell and Frederick John Bell. Croyden was an old assistant from the Oxford Street shop, and his business had been acquired by Mr. John D. Marshall prior to the amalgamation. A third name may be associated with these two, that of Joseph Smith, who was not improbably related to Frederick Smith (also of the Haymarket), John Bell's father-in-law.

One of the surprises is the occurrence of Theophilus Redwood's name. The business of E. Winstanley & Son, which had been in evidence since the Creat Fire of 1666.

One of the surprises is the occurrence of Theophilus Red-wood's name. The business of E. Winstanley & Son, which had been in existence since the Great Fire of 1666, was purchased by Corbyn & Co. about the year 1850. A few names have been transcribed because the businesses to which they refer are still carried on as retail concerns under the same or similar styles. There are some omissions from this Directory, notably that of Cooke & Meggeson (afterwards Meggeson & Co., Ltd.), who then had a pharmacy in Cannon Street, E.C.

How I Studied

By C. Daglish (Bell Scholar, 1936)

AVING had a little experience in retail pharmacy before commencing my apprenticeship, I knew that the life of a pharmaceutical apprentice was by no means a "bed of roses," hence I was resigned to spend most of the evenings of my "life" attending night classes. I did, however, attempt to formulate a time-table for the three years which were to follow, and so, after the first two had passed and the Intermediate examination of London was behind me I decided to study for the Society's scholarships. I was lucky in the fact that our local Technical College (Bradford) held an introductory evening course for those intending to take the Qualifying examinations, and so I attended three evenings a week, studying pharmaceutical chemistry, pharmacognosy and dispensing.

I tackled the problem of the pharmacy paper by studying, by means of summarising, chapters from "Tutorial Pharmacy" (Cooper), especially those dealing with the methods of extracting drugs, the official solutions and injections, and the general principles of pharmaceutical practice.

Not having studied Latin at school I did a chapter each week from "Latin for Pharmacy Students" (Cooper and McLean)

and the exercises were corrected by Mr. Cooper himself at the dispensing class. I also borrowed some forensic pharmacy notes from a friend who was taking the Chemist and Druggist Qualifying examination, and recopied these. These theoretical subjects, together with the "correct dispensing" of the class and the knowledge gained during my apprenticeship, fulfilled the requirements of the syllabus.

From previous papers I found that the English essay was usually set on pharmaceutical subjects, hence I relied on the foregoing knowledge to carry me through. The subjects chemistry and botany meant only a revision of the lecture notes I had taken for the Inter-



Mr. C. Daglish

mediate examination, together with a little from the phairmacognosy lectures. French presented no more difficulties because this subject had been taken for the Matriculation, hence only a revision of grammar was required. I did this by studying each week a chapter from Heath's "French Grammar," and supplemented it by reading as much as possible, particularly from Nelson's "French Classics."

I intended making an attempt at the Leverhulme as well as the Bell, so I brought business knowledge into my weekly curriculum. Here again I was lucky, because I had taken bookkeeping for the Matriculation, hence it needed only a brushing up of such problems as profit and loss accounts, balance sheets and the items appearing there, cheques and bills of exchange, as well as elementary double entry book-keeping. Hence with the syllabus complete it meant only a regular working of a set time-table extending over most evenings and week-ends.

My advice to all pharmacy students, especially now that a full-time course is required for the Preliminary Scientific examination, is to spend the evenings of the apprenticeship studying the above subjects, because it will help to make more complete the work done at the shop, fit them for the scholarship examination, and lighten the burden of the Qualifying examination.

By E. H. Fagg (Leverhulme Scholar, 1936)

SUPPOSE every apprentice at some time or other looks up the conditions and syllabus for the Bell and Leverhulme scholarships, and then too frequently decides he or she has no chance and leaves it at that. This is a great pity, as one of the chief difficulties with regard to the college work

is that one has to a certain extent lost the habit of steady concentrated study in the evenings since leaving school, and one has to, as it were, begin again, this often taking up the greater part of the first term. By studying with the scholarships as an objective, however, the college work, instead of being a fresh start, is a continuation, and one is able to obtain a greater benefit from the hours put in.

Having then decided to work for the scholarships an early start should be made as soon as the summer finishes. Papers

set at the previous examinations should be obtained. From these one can obtain a very good idea of the type of question set, and of just how much is read into the syllabus.

After obtaining a general idea system of study should be drawn up for each evening, leaving Sunday and one midweek night free for recreation. The midweek break is important if one wishes to carry out the scheme and at the same time maintain one's interest. The system will depend on the individual, but the factors to be taken into account will be the relative amounts of material in each subject and the individual's weaknesses in any particular subject. As one will always work best at a subject in which one is interested, it is



MR. E. H. FAGG

important to remember to allow extra time to the most irksome subject. Again, some people like to concentrate on one subject only each night, whilst others prefer to do two subjects a night and compensate by doing these two on two nights a week instead of one. Personally, I found that the latter system of working kept my interest to a much greater extent.

Most people—myself included—find that, when attempting to study at night after working all day, if they merely sit and read a text-book they very soon become drowsy. I found that the best way to counteract this tendency was to jot down rough notes of the main points. In chemistry and pharmacy especially, the writing down of a few equations probably sum-

marises the substance of hours of reading.

In supplementing the knowledge of business methods obtained in the pharmacy I found the evening class in commerce held at the local technical institute of great assistance. In the matter of text-books one cannot better the British Pharmacopæia, Bentley's "Pharmaceutics" and Cooper and Dyer's "Dispensing for Pharmaceutical Students," especially as all these will be useful at college. Finally, if after an hour's honest endeavour one finds one is achieving nothing, it is better to "down tools" for the evening, as no good can come of "flogging" a tired brain.

By R. Pierce (Fairchild Scholar, 1936)

DECIDED to enter for the Fairchild scholarship as soon as I heard the result of the Preliminary Scientific examination. After having obtained the syllabus, previous papers, and a list of books recommended for study, I drew up a timetable, allotting rather more time to pharmacy and business knowledge than to the other subjects, as the former seemed to be of more importance.

For the chemistry and physics portion of the syllabus I revised my Part One notes, paying particular attention to those parts which had pharmaceutical application, and studying some of the simpler chemicals (organic and inorganic) of the British Pharmacopæia. Revision of the botany syllabus was also necessary, and in addition some elementary pharmacognosy was required. Only a general knowledge of the latter is needed. For anatomy, of course, a larger text-book must be consulted.

The subject of business methods seemed, at first, rather formidable. To cope with it I obtained a standard book on book-keeping and worked steadily through the various transactions outlined, working out examples and preparing answers

OZ. 5

OZ.

to questions set in previous papers. Finally I read "Business Methods for Chemists' in order to obtain information specific to chemists' businesses. The knowledge of the sale of poisons is, in my opinion, best acquired by practical acquaintance in the shop, supplemented by answering questions which have appeared in Forensic Pharmacy papers in previous Qualifying examinations.

Pharmacy occupied the main part of my spare time.



Mr. ROBERT PIERCE

I subdivided into galenicals, dispensing, Latin and calculations.

From previous papers it appeared that galenicals in which chemical reactions took place, or those which illustrated a general principle—e.g., tincture of myrrh illustrating the process of modified macerationwere most likely to be set, and so these were studied in detail. Dispensing also well repaid study, especially the usual difficulties encountered in dispens-In odd moments I also practised translating Latin prescriptions into English and vice-versa, and did calculations on percentages and metric equivalents.

Finally came the day of the From examination. notes written by previous prize-winners I realised the importance of clear, concise answers, and endeavoured to spread the

time out evenly on each question. I also found it a wise policy to attempt the questions which I knew the best at the beginning and to use tabulations whenever possible. The time spent in studying for this or any other scholarship will never be regretted, for even if one is unsuccessful the knowledge gained will be of considerable value in the qualifying course. fore urge all those eligible to enter and to remember that "absque labore nihil."

Foot-Skin Infection

MONOGRAPH entitled "A Clinical Note on Fungus Infection of the Skin of the Feet," by Surgeon Rear-Admiral J. Falconer Hall, is printed in an abridged form in Vol. 30, No. 9 of the Proceedings of the Royal Society of Medicine. The author points out that numerous drugs and therapeutic agents have been tried for diseases of this type. He proceeds to record the general lines of treatment which, as the result of experience in more than 1,000 cases of epidermophytosis of the skin, he has found to be the most successful. They are classified thus: -

INTERTRIGINOUS TYPES.—(I) With gross maceration: twice daily the feet are bathed in a lotion for half an hour and afterwards carefully dried and powdered. (2) Acute and sub-acute cases: every night an ointment is rubbed into and around the infected areas. Next morning the ointment is wiped off, the feet bathed in a lotion and a paint applied to the lesions. At bedtime the feet are again bathed, dried, and the ointment applied. (3) Chronic cases: as for acute and subacute cases but a special paint containing a copper salt is used.

Vesiculo-bullous types.—All vesicles and bullæ are opened twice daily with a sterile needle and a paint applied. If the surface of the lesion becomes raw and weeping the paint is discontinued and lotions alone are used, while, if the surface becomes scaly, an ointment is substituted for the paint.

HYPERKERATOTIC TYPES.—A paste is applied twice daily but never for longer than five days at a time, with gradual reduc-tion in the strength as peeling becomes established. If irritation occurs a soothing calamine cream is applied.

Fissures should be painted with silver nitrate 1 per cent. to 5 per cent. in nitrous spirit of ether. Toomey uses a 10 per cent. solution. Sharlitt recommends 1 per cent. tetraiodomethenamine, salicylic acid, and thymol in collodium flexile. The author enumerates the following preparations which he uses in preference.

- (1) Powders.—(a) I per cent. salicylic and benzoic acids and 5 per cent. boric acid in talc. (b) Mycozol dusting powder.
- (2) Lotions.—(a) Potassium permanganate, 1:4,000. (b) Abracide skin lotion, 1:100.
- (3) OINTMENTS.—(a) Whitfield's ointment. (Often wrongly prescribed.) Acidi benzoici ... Acidi salicylici gr. 15 Paraff. mollis ... dr. 2

Olei cocois nucis ... oz. 15 gr. of hard paraffin should be added in hot weather.

(b) Mycozol.

- (4) Paints.—(a) Liquid mycozol.
 - (b) Acidi benzoici dr. $1\frac{1}{2}$ Acidi salicylici dr. Acetoni oz. . . . Spiritus vini meth. ... oz. 4 (c) Hydrarg. perchloridi Acidi salicylici ... gr. I gr. 10 Olei ricini m 10 Spiritus vini meth. ... oz. (d) Cupri nitratis ... gr. 40 Acidi benzoici dr. $1\frac{1}{2}$. . . Acetoni dr. $1\frac{1}{2}$

Spiritus vini meth. ... The last lotion is recommended by Whitfield.

Aq. destillat.

Salicylic acid has a fungicidal action, and is keratolytic. If used in too strong concentrations it will crack the skin, and in some patients it causes a mild dermatitis. In hyperkeratotic cases it can be used in the form of a paste, in strengths as high as 2 drachms to an ounce of soft paraffin. It is an extremely valuable remedy. Carbolfuchsin, either alone or as Castellani's paint, gentian violet, malachite, and brilliant green are dyes which have been used with success. Malachite green is now commonly applied. Chrysarobin has been recommended. Apart from its staining properties, it may cause dermatitis, and should be used with caution. Kenedy recommends a paint containing cignolin gr. ½ and oil of cade m 40 in rectified spirit oz. 1 in chronic cases. Buchbinder and Jones have faith in abracide skin lotion, which the author also uses. In addition to the lotion and powder an ointment is employed. Iodine is a fungicide and has some therapeutic value. It often irritates, and its use is apt to produce the "brown mess" on the skin described by Haldin-Davis. According to Wigley, the preparation called paranitrophenol gives encouraging results, while Lomholt recommends the ethyl ester of paraoxybenzoic acid in 5 per cent. solution in spirit or as an ointment as a clean, convenient, and non-staining remedy. Mercurochrome 220 soluble is, the author states, most disappointing, and he has ceased to use it. Mention is made of the application of ripe oil birmyth violet, total is made of the application of pine oil, bismuth violet, tetrachlorophenol sodium, chinosol, and thymol and cinnamon. Belisario has had successes by applying citric acid several times daily. Unusual methods of treatment suggested are the intravenous injection of Lugol's iodine, the inhalation of ethyl iodide, and the attraction of fungi to the surface where they can be better attacked by the application of packs of Sabouraud's medium.

This, the author adds, is not a complete survey of therapeutic measures. It is necessary to "go slowly" and keep on long after apparent cure is achieved. The monograph concludes with suggestions for general and subordinate treatment.

PHENOLPHTHALEIN REGARDED AS UNSAFE.—" Phenolphthalein is a drug that is largely used as an habitual laxative. Its popularity is due to the fact that it acts and is usually prepared in convenient palatable form. In certain individuals the drug is extremely toxic, producing skin eruptions and other evidences of toxæmia. . . . The patients who have taken this drug for any length of time present evidence of chronic catarrhal enterocolitis. The drug belongs to the class of cathartics that produce local irritation. Many of the manufacturers of agar and oil mixtures slip in a dose of phenolphthalein to make the preparation more active . . ."—Dr. H. W. Soper in "The Journal of the American Medical Association.

Trade Notes

ANNUAL HOLIDAY.—Wood Bros. Glass Co., Ltd., Borough Flint Glass Works, Barnsley, have granted all employees of the company one week's holiday with pay from August 21 to August 30. At this period the works will be closed, but a skeleton staff will be maintained to deal with urgent business.

Ex-Lax bonus offer.—Ex-Lax, Ltd., Slough, Bucks, have issued a revised price list and bonus terms in which the former offer is more than doubled. A new price list carrying a bonus has been introduced. These ordinary terms are separate from the special celebration double bonus offer referred to elsewhere in this issue.

Addis face powder brush.—Illustrated on this page is one of the face powder brushes recently introduced by Addis Brush



Works, Hertford. This brush is made from the finest pure sterilised hair and cannot harm the most delicate complexion. It is mounted on a light base with motherof - pearl finish, measures 5 in. by in. and is curved. Directions for use

are included in the box and it is stated that the use of this brush provides a quick and easy way to obtain a velvety finish to make-up.—Messrs. Addis' works are closed from August 21 to 28 for their annual holiday.

Sangers' catalogue.—We have received from Sangers, Ltd., 258 Euston Road, London, N.W.1, their catalogue of proprietary articles, druggists' sundries, etc., for the period of 1937-38. This voluminous publication is thumb-indexed for ready reference to the chief sections of the catalogue, namely, window show terms, proprietaries, sundries, packed toilet goods and photographic.

STREPTOCIDE OINTMENT.—Evans Sons Lescher & Webb, Ltd., Hanover Street, Liverpool, have sent us a specimen pamphlet relating to the uses of Streptocide incorporated in the form of an ointment. The utility of para-aminobenzenesulphonamide has been limited by its low solubility in water so far as local application is converted. In this Streptocide, sintends application is concerned. In this Streptocide ointment, however, a special non-toxic and non-irritant solvent is used with more effective results. This product is suggested for use in certain infective conditions of the skin, in chronic ulcerative conditions and rashes of the scarlatinal type. Streptocide ointment is issued in 2-oz. tubes.

Bile beans.—Elsewhere in this issue a detailed announcement of the attractive new terms obtainable by chemists regarding the sale of bile beans is made. These products, which are made by C. E. Fulford, Ltd., Carlton Hill, Leeds, 2, will be issued unstamped from August 16. Increased profits for chemists are assured, and details will be posted this week.

MILTON NEW EMERGENCY FLASK.—A new pack described as the Milton emergency pack has been issued by Milton Proprietary, Ltd., John Milton House, London, N.7. It is intended for carrying in the pocket or handbag for immediate use against burns, cuts, stings, sunburn, etc. A special introductory offer on orders of not less than two dozen flasks is made elsewhere in this issue, the offer remaining open until August 21. An intensive advertising campaign is in progress.

JULY PRICE LIST.—We have received from Potter & Clarke, Ltd., 60-64 Artillery Lane, London, E.I., a copy of their new price list. This contains a complete range of Potter & Clarke products. It measures 9 in. by 5½ in. and contains 214 pages. In addition, a brochure of special preparations includes amounts by producting tablets. In addition, a brochure of special preparations includes amounts by producting tablets. poules, hypodermic tablets, lamellæ, powders for dispensing, reagents, etc., and a third publication printed in colour gives a complete list of the Arnaud series of pot-pourri jars.

ENGLISH LAVENDER.—We have just received from Perks & Llewellyn, lavender cultivators and distillers, Hitchin, Herts, a bunch of new crop lavender flowers. The stalks carry full spikes of flowers with the characteristic and delightful odour of English lavender. A report of the crop was given in the C. & D., July 17, p. 69, in which it was stated that it should be an excellent season both for finest quality flowers and oil. The appearance of the flowers seem amply to justify this fore-

Grips pastilles.—A copy of the autumn folder now being circulated to the trade by J.W. Lightbown & Sons, Ltd.. Manchester Road, Accrington, has just been forwarded to us. This is printed in colour and gives details of a tempting bonus offer which remains open until September 1. A handsome display jar containing dummies, together with show material, is provided for display purposes. Further details are obtainable on request.

Apollo pure stick liquorice, advertised in this issue, is manufactured in Anatolia, where the root is cultivated. It is the concentrated extract of carefully-selected root and is offered to chemists as a product of the highest purity. Apollo liquorice is packed in 4-lb. cartons, twenty-eight in a case, and is issued in 1, 2, 3 and 4 oz. sizes (divisible into 1 oz. sections). Soft extractum glycyrrhizæ, B.P., packed in drums of 40 lbs., is obtainable from the same importers, Macandrews & Forbes, Ltd., Bush House, Aldwych, London, W.C.2.

Trade-Mark Applications

The figures in parentheses refer to the classes in which the marks are grouped. A list of classes and particulars as to registration are given in "The Chemist and Druggist Diary and Year-Book," 1937, p. 338.

(From "The Trade Marks Journal," July 28, 1937)

"Sonocrest"; for photographic chemicals, etc. (1). By L. K. Sonneborn, 9/10 Abford House, Wilton Road, London, S.W.I. 576,575. (Associated.)

"PATTERNEER"; for photographic chemicals, etc. (1). By L. Berger & Sons, Ltd., 201 Morning Lane, London, E.9. 578,178.

"AULD LICHT"; for dog medicines, excluding soap (2). By D.

McKiddie, 16 Bank Street, Kirriemuir. 577,175.

Vakemal.''; for worm medicines (2). By T. B. Hemsley, 14 Archbold Terrace, Jesmond, Newcastle-on-Tyne. 577,602.

"Mentholds"; for throat and chest tablets (3). By Cupal, Ltd., King Street Bridge, Blackburn. B573,890.

"FORAPIN" with insect; for insect sting preparation (3). B. H. Mack Nacht., Syrlinstrasse 2, Ulm-on-Danube and Illertissen-Au, Bavaria. 576,688. (Associated.)

"Apondon"; for obesity preparations (3). By Veritas Drug Co.,

pondon''; for obesity preparations (3). By Veritas Drug Co., Ltd., 94 Clerkenwell Road, London, E.C.1. 577,355.

"FILTROLUX"; for medicinal chemicals, excluding bacteriological preparations for injection (3). "Sekundal"; for soporific preparations (3). By M. Woelm A.-G., Bahnhof 7, Eschwege, Germany. 576,735/737.
"RED SQUARE" with words "British Surgical Dressing" and red

Engelbrektsgatan, Stockholm 5, Sweden. 575,386.

"Tosmin"; for medicinal chemicals, excluding suppositories (3). By L. Frey, Stampfenbachstrasse 59, Zurich, Switzerland. 577,200.

"NILVOTS"; for medicinal chemicals (3). By R. G. Davies, 21 George Street, Pontypool, Mon. 578,098.

"MARGARET"; for perfumes and lipstick (48). By E. Hack, 73 High Holborn, London, W.C.I. 576,519.

"RAH-ME"; for toilet creams and powder (48). By R. E. Golds-brough, Lebanon Road, London, S.W.18. 576,711.

"Tea Cosy"; for perfumed toilet soap (48). By Doering & Co., A.G., Berliner Allee 134, Berlin-Weissensee. 577,217.

Births

Notices for insertion in this column must be properly authenticated.

LOUGHRAN.—At Antrim House Nursing Home, Cliftonville, Belfast, on July 30, the wife of A. F. Loughran, Ph.C., of a daughter.

Marriages

HOPWOOD—YEOMANS.—At Ashby-de-la-Zouch, on August 2, Frank S. Hopwood, M.P.S., to Rita Yeomans.

JOLLEY—BIRT.—At Hartford, Northwich Parish Church, on July 19, by the Rev. Canon Oliver, David Leslie Jolley, M.P.S., 14 Newry Park, Chester, to Edith Violet Birt, "Dalegarth," Hartford.

Kearney—Deans.—On July 30, William John Kearney, M.P.S., Hawick, to Elizabeth Kerse Deans.

Deaths

COOPER.—Recently, Mr. Walter Mell Cooper, Ph.C., National Hospital, Queen Square, London, W.C.I, aged fifty-five.

Davies.—At 68 Blatchington Road, Hove, on July 30, Mr. William John Davies, M.P.S., aged sixty-six. Mr. Davies served his apprenticeship at Cardiff, and after experience as an assistant in London and Brighton took over the business at Hove thirty years ago. Mr. Davies was a loyal supporter of his local association. The funeral service was held at the Old Parish Church, Hove, on August 4, prior to cremation. Among those present were Mr. D. Foster (president of the Brighton and Hove Association of Pharmacy), Mr. F. W. Burgess, Mr. John Plowright, Mr. A. G. Novis, Mr. F. W. J. Beer and Mr. T. G. Burchell.

Handford.—At Exmouth, recently, Mr. Henry Handford, chemist and druggist, aged ninety-two.

Masson.—Recently, Sir David Orme Masson, D.Sc., F.R.S., Emeritus Professor of Chemistry in the University of Melbourne, aged seventy-nine.

NICOLSON.—On August 5, Mr. David Walker Nicolson, retired chemist and druggist, 8 Kay Park, Kilmarnock. Going to Kilmarnock over twenty years ago, Mr. Nicolson took over the business of Mr. W. G. Boyd, chemist, Portland Street. After some years he transferred the business to adjoining property. He retired about two years ago. Mr. Nicolson was president of Kilmarnock Bowling Club and a member of the local Burns Club. For many years he acted as secretary of Kilmarnock Chemists' Association. He is survived by a widow.

WHITTOCK.—Recently, Mr. William Henry Whittock, chemist and druggist, Edgbaston, Birmingham. Mr. Whittock qualified in 1891.

Personalities

Mr. James A. Johnstone, M.P.S., Wallingford, Berks, has been elected to the committee of the Oxfordshire Agricultural Society.

MISS MURIEL L. BENNETT, daughter of Mr. T. Leigh Bennett, M.P.S., Stockport, has recently passed the final examination for the M.B., Ch.B., Manchester University.

Certificates of naturalisation have been granted to J. Bruhl, chemist, New Chester Road, Rock Ferry, Birkenhead, and to M. Frohlich, medical practitioner, 162 Stepney Green, London, E.I.

Mr. John Dyce, M.P.S., manager of the Grafton Laboratories, Singapore, is on a visit to this country and may be addressed c/o the P. and O. Bank, West End Branch, 16 Cockspur Street, London, S.W.

Mr. E. Crossley, manager of the Belper branch of Boots, Ltd., has retired after thirty-three years' service with the company. The directors presented him with a gold watch, and the staff at the local branch with a tobacco pipe.

MR. Herbert Skinner, Ph.C., member of the Council of the Pharmaceutical Society, and Mrs. Skinner, sailed from Liverpool for Quebec, Canada, in the "Duchess of Bedford" on August 12. They will be away for eight weeks, visiting various cities, including Vancouver, and return through the United States, leaving New York on October 2 in the "Georgic."

MR. G. W. CRAWFORD, M.P.S., who has been home on furlough for some months, is returning to Singapore by the s.s. "Naldera," sailing on August 13. Mr. Crawford is

managing director of Medical Hall, Ltd., 3 Battery Road, and general manager of Grafton Laboratories, wholesale and manufacturing chemists, 20B Collyer Quay, Singapore. A native of Invergordon, Scotland, Mr. Crawford was apprenticed to the late Mr. was John McMillan, Glasgow, and after studying at the Glasgow School of Pharmacy qualified in 1901. He then decided that a career abroad offered better scope, and accepted a post as assistant chemist in The Dispensary, Singapore. In 1906 he obtained managership of The Pharmacy, Singapore. In The Pharmacy, Singapore. 1916 The Pharmacy bought the business of Medical Hall and Mr. Crawford became a part-



Mr. G. W. CRAWFORD, M.P.S.

ner. This business was formed into a private limited company in 1920 with a capital of \$150,000, and seven years later Mr. Crawford acquired the entire capital. In 1925 a wholesale establishment under the title of Grafton Laboratories was opened, manufacturing and other activities carried on and many capital lines leaded of the Translations of the business has agency lines looked after. The history of the business has been one of steady expansion, and the present staffs now total forty employees, of whom six are British pharmacists. When Mr. Crawford first went to Singapore there was no poison law and no control in any way of chemists or the practice of pharmacy. In 1905 he was appointed by the Straits Government a member of a committee to draw up a poisons ordinance. In 1933 he was appointed a member of the newly constituted Pharmacy Board and helped to draw up the Pharmacy Among his other activities he became a founder Ordinance. member of the Straits Settlements Pharmaceutical Association, on which he served for several years as honorary secretary and during which period he secured for members of the Association the concession to manufacture pharmacopæial preparations from duty-free alcohol; a privilege still in force. In 1935 he was president of the Association, which office he resigned on coming home on furlough in 1936. He also lectured on pharmacy and materia medica for fifteen years, from 1909 to 1924, in the King Edward VII College of Medicine, an appointment he resigned owing to the increasing calls made upon him by his business.

Recent Wills

MR. WILLIAM PATTINSON, J.P., chemist and druggist, Idylwild, Hexham, Northumberland, who died on May 19 last, left property of the gross value of £22,006, with net personalty £13,732.

Mr. Marmaduke Peasgood, 146 Quay Road, Bridlington, Yorks, formerly of Dollymount, Dublin (formerly secretary of Trench's Remedies, Ltd.), who died on April 23 last, left estate of the gross value of £12,099, with net personalty £12,034.

Mr. Frederick Joseph Osborne, 24 St. John Street, Ashbourne, formerly of 69 Edith Road, West Kensington, W., chemist and druggist, who died on December 27 last, aged sixty-three, left estate gross value $\pounds 2,846$, with net personalty $\pounds 346$.

Professor Henry Edward Armstrong, D.Sc., F.R.S., Granville Park, London, S.E., Emeritus Professor of Chemistry at the City and Guilds College, South Kensington, who died on July 13 last, aged eighty-nine, left £16,368, with net personalty £15,849.

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THE

CHEMIST AND DRUGGIST

VOL. CXXVII

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Problems in Education

SCRUTINY of examination results, whether in pharmacy or any other profession, is necessary if we are to evaluate the curriculum set out by the examining authorities. The Pharmaceutical Society's Council not only prescribes the form of training, but is also an examining body, though it necessarily delegates this duty to appointed examiners. It also carries on a college, and so sets a standard which, by circumstances, becomes imposed on all the technical institutes in the country and all universities examining in pharmacy. The result of this concentration under one authority is an increase in the requirements of the Society's examinations which, unhappily, bears only a remote relation to the business of a chemist and druggist, the protection of which is one of the Society's objects. The past year has seen the reformed requirements brought into operation, and the Pharmaceutical Chemist examination in July showed the latest modification. It is to be hoped that we shall escape any further change for some years. Pharmacy needs a rest from the over-zealous activities of the educationist. Most pharmacists forget what the syllabus entails once they have their diploma. We are assured by councillors of the Society that there is certainly to be a rest from changes in the curriculum for at least five years: this is something for which to be grateful.

A point worthy of consideration is the relationship of our Society with universities. The development of the university idea in industrial centres has influenced pharmaceutical educational development, and it is a reaction from this association which has moulded policy. The introduction of physiology was a direct result of the establishment of the Pharmacological Laboratories with a medical man as a director and the association of London University with pharmacy as a segment in the Medical Faculty. Similarly, the Preliminary Scientific examination, a name borrowed from this University, was made of the same standing as

that of the University, but no reciprocal treatment has been received. The status accorded to Bachelor of Science or even a Bachelor of Pharmacy is not allowed to a pharmaceutical chemist, yet the examination is almost the same in each case. Pharmacy gives, but seldom receives anything in return. The next move, it would appear, will be to divert training more and more into university channels.

Development should be sought in the direction of separating the two functions of the Pharmaceutical Society; even, with an educational Board of Control, we might get a curriculum more in keeping with the ordinary requirements of the pharmacist. It is difficult to appraise the values of the latest changes as complete results are not available. In January, for instance, in London five candidates were referred in physiology and thirty failed. There were 131 entrants, but whether all came under the requirements it is difficult to say. In Edinburgh, out of fifty-four who entered, none was referred but eight failed. Somehow the percentages seem wrong. Again, on examining the analytical results of schools and colleges, first entries for the examination are disturbing. In the Pharmaceutical Chemist examination one technical college had a 100 per cent. pass list, and another, a university school, failed to achieve any success; the others varied from 33 to 80 per cent. In publicly owned schools for the Chemist and Druggist examination the figures of success ranged from 25 to 66 per cent., while the privately owned schools varied from 29 to 32 per cent. Another disturbing factor arises out of the Privy Council London Visitor's report: 127 were referred in pharmacy. He writes: "It is necessary that a high standard in pharmacy should be maintained, since this is the subject which the candidate will especially practise after qualification." The Society exists for the promotion of that purpose; and it seems a little bewildering that it should seek after the academic side with such eagerness to the danger of missing the true objective.

Reading a Trade Paper

"The Student and the Trade Report" is the subject of an article which appears in this issue. It is usual for the pharmacist of many years' experience to include in his advice to his apprentice the phrase: "Read the trade Press." Unfortunately, this injunction is seldom followed up by an explanation as to how to do so, and ultimately the trade paper is read just as if it were the ordinary newspaper which has no specialised appeal. In the article referred to an attempt has been made to break through the rigid price appeal of the Trade Report into a much wider field for the advancement of learning this highly specialised trade in drugs and chemicals. In some cases an established reader is attracted to special features of his trade paper, but for the student every page should be a pointer to some new facet which should help him in his pharmaceutical career.

So far as The Chemist and Druggist is concerned, it is essentially a newspaper chronicling weekly the events happening in pharmacy or which concern pharmacy. Council elections have not, in the past, attracted the number of voters they should; but the oncoming generation will perforce have to take more interest, and the time to acquire knowledge of conditions in pharmacy easily is now. The readiest method of doing so is to study The Chemist and Druggist, and, in the first place to follow up the points which must appeal to the young student. Let him learn the names of the various pharmaceutical organisations and their histories. In the curriculum students are required to know the history of pharmacy from 1600 onwards. As an examination requirement, this calls for no criticism except that from the point of view of the pharmacist himself the modern history of pharmacy commenced at a much later date. It would not be a bad start for the student to study the history of pharmacy from the Jenkin case in 1920 and ponder over its effects, which have not yet been completely realised.

An Educational Policy for Pharmacy

By E. G. Bryant, Ph.C., B.Sc., Ph.D.

HERE are three well-defined principles which should underly all courses of training for a professional body. They are, indeed, so self-evident that there should be no necessity to state them; but, unhappily, an educational scheme for pharmacy has been established in which these principles have been overlooked, with most unfortunate results. It is not my object to criticise those who have drawn up and put into force this scheme, but to look to the future, and to make a suggestion that, at the earliest possible moment, having regard to the commitments of the Society with those education committees who control provincial schools of pharmacy, a new policy should be adopted, in which these principles are embodied.

The first principle to be laid down is that the entrance to the profession should be guarded by a preliminary examination which is designed to select only those applicants who have shown an aptitude for study and are likely to profit by the strenuous and lengthy course of reading and practical work which will follow their admission. In theory, a Matriculation examination should serve this purpose. Whether or not, in

practice, it does actually achieve its desired end is a matter for discussion between those educationists who are engaged in the preparation of pupils for these examinations. Pharmacy, in common with other professional bodies, must accept what material comes to its hand.

The second principle is that the technical course of study should be comfortably within the compass of the student of average ability. The course should be built up on a sound foundation of scientific principles, and, by carefully graded steps, the student should be led from one stage to the next higher. Mere bulk of knowledge is not a desirable aim. It is far better, from the point of view both of mental training



Dr. E. G. BRYANT

and of technical efficiency, that a student should learn comparatively little well and thoroughly than that he should be asked to assimilate but superficially a large mass. Looking at the matter from the point of view of the examination, a student is far more likely to fail if he has been required to learn a large number of facts than if, on a more restricted syllabus, he has been carefully trained in basic principles and their application to his work. In my opinion, the cause of the high proportion of failures at the examinations of the Pharmaceutical Society is to be found in the nature of the syllabuses. They lay down a far too extensive amount of work in the time available, and the foundations are too weak. The teacher and student who prefer to work on principles, rather than on facts, are placed at a disadvantage as compared with the "crammer."

The third principle is that the course of training should be adapted to the work which the trainee will be called upon to perform in his post-graduate career. Nothing is more subversive of true education than the compulsion which is laid upon teachers and students to go through a course of learning matters which they know will not be applied in the future daily work of the student. A feeling of unreality is engendered in the mind of the student, and that gives rise to suspicion both of the teacher and of the examiners. He approaches the examination as a hurdle to be surmounted as best he may; he "swots up" such matter as he judges will be required in the examination, and, when once the test is passed, he proceeds to forget all he has learnt. The teacher, much against his will, has to become a mere signpost to the likely examination deal with those matters which, for the time being, happen to be upper-

most in his mind. At the time of writing, microbiology and sterilisation appear to occupy that position, and if the recent paper in pharmaceutics in the Chemist and Druggist examination is to be taken as a criterion, three-eighths of the time devoted to the teaching of pharmaceutics should be given to these matters. To very few practising pharmacists is the opportunity given of using three-eightieths, much less three-eighths, of their time in work of this nature. I do ask the Board of Examiners to have regard to the relation which, in any course of training, must subsist between the examination and actual practice.

Application of Three Principles

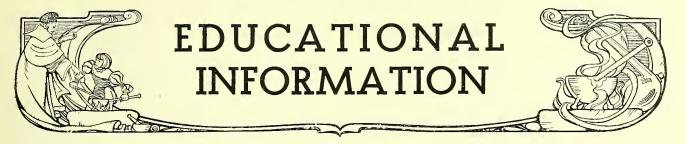
Having these fundamental principles in mind, we may now proceed to develop a course of training and a policy which are educationally sound, and which, for that reason, may be expected to enhance the prestige of pharmacy, as, undoubtedly, it has been debased by a policy in which these principles have been ignored.

As to the Preliminary Scientific examination, since, shortly, all entrants to the calling will have passed the equivalent of the Matriculation examination, there does not appear to be a real need for the Society to continue to conduct this examination. It could usefully be replaced by the Higher School Certificate or an Intermediate Science or Pharmacy examination. About forty years ago the Society ceased to conduct its own Preliminary examination—greatly to the advantage of the profession.

With regard to the Qualifying examinations, it is very desirable that the distinction between the statutory and the academic functions of the Society should be kept clearly in mind. Statutorily, the Pharmaceutical Society is charged with the duty of admitting to the Registers of Pharmaceutical Chemists and Chemists and Druggists those who have proved themselves to be of "sufficient skill and knowledge" to carry on the business of chemist and druggist, that is to say, to control the retail sale of poisons and to dispense medicines. It may be that an attempt more clearly to define the business of the chemist and druggist will result in the widening of the scope of his functions; but, for the time being, and as we know the business to-day, that definition must serve. To give effect to this statutory obligation, one qualification only should be available; it may be that of Pharmaceutical Chemist or of Chemist and Druggist. Which is selected is a matter for the decision of the Council, and for the purpose of our present thesis the choice is immaterial. Leading up to this qualification there must be devised a course of training, broad enough in its basis and comprehensive enough in its width to provide a thoroughly sound and sufficient training for the men and women who are to practise pharmacy, either in retail, wholesale, hospital or educational work. A round-table conference of representatives of every branch of pharmaceutical practice would quickly result in the evolution of a suitable course of the cou study for this examination, embodying the fundamental principles I have laid down, and in a decision as to the length of The subjects of forensic pharmacy and dispensing would naturally occupy the foremost position in the course, and the examination in these subjects should be in the hands of the Society alone. No exemption on the grounds of examination by an external body should be granted.

When we turn to the academic ambitions of the Society, we

When we turn to the academic ambitions of the Society, we can allow ourselves greater latitude. Proceeding from the basic statutory course, further training and examination may lead to diplomas in pharmaceutics, pharmacognosy, pharmaceutical chemistry, biochemistry or any other subjects which the development of pharmaceutical practice may render desirable. Post-qualification diplomas may be granted for courses of training and examination in two or more subjects of the nature set out. The mistake of setting up a massive overloaded course and examination like that for the present Pharmaceutical Chemist qualification must, at all costs, be avoided. These higher diplomas should be awarded to those who desire to specialise in any branch of pharmacy, and the course of training preceding the examination should be adapted to the work which the specialist will perform.



Pharmacy

GREAT BRITAIN

THE examinations of the Pharmaceutical Society are written and practical, with an oral test in pharmacy. The syllabus includes all the changes mentioned in previous years without the concessions for which arrangements had to be made. Simply expressed, it is more straightforward

and there is no need beyond the published syllabus to ask whether candidates can escape some of the developments in the examination

during recent years.

Changes have been numerous, and it was quite understandable that anyone without first-hand experience and knowledge should be confused. The first examination on zoology was in July this year, while physiology had its practical side in the Pharmaceu-

tical Chemist examination.

Provision is made to hold the written portions of the Pharmaceutical Society's examinations at convenient provincial centres. The practical takes place in London and Edinburgh only, and is arranged to follow the written as soon as practicable. Students who have passed recognised science examinations equivalent to the Preliminary Scientific have many advantages; a good foundation is laid for future progress. Greater stress is being laid upon the value of taking the Preliminary Scientific early, and those whose experience of pharmacy justifies them in expressing an opinion have no hesitation in suggesting to parents and guardians that it ought to be taken before apprenticeship begins. It is still necessary to make it clear that full-time collegiate training is com-

pulsory; the number of hours is specified as so many a week for the required academic terms, and attendance must satisfy

the governing authorities.

The standards for the entrance examinations into pharmacy have become more stabilised, and though Matriculation is not the only examination accepted, a better foundation is made by the elimination of the low standards so long prevalent. Students should be reminded that no practical course of study or approved course of instruction or part thereof undergone before registration as an apprentice or student can be recognised under the regulations.

The number of schools recognised for the training of students for University standard is now at a reasonable figure, and no increase is likely to be needed for future requirements in pharmacy. The Preliminary Scientific is on the same basis as the First Science of London University. London B.Pharm. examination, whether "internal" or "external," is now reduced in length from nine to eight days, and the same occurs in the Ph.C. The only difference between a Ph.C. examination and the B.Pharm. examination is in forensic pharmacy.

We recommend that full use should be made of the details set out under the respective subjects, and call the attention of masters of apprentices to the instructions on training embodying a practical course of study during apprenticeship similar to that set out for institutions. This is attached as an

appendix to the indentures. It is yet too soon to look for any results from these training suggestions. It is advisable for eligible students to train and enter for the scholarships now available as a sound method of beginning a career.

Preliminary Examinations

The first step on deciding to take up pharmacy is to pass a Matriculation or other examination admitting to a course for

a degree of any university in Great Britain or other university approved by the Pharmaceutical Council, or pass at one sitting the medical preliminary of the College of Preceptors or the Educational Institute of Scotland, of which mathematics must be one of the subjects. If a Preliminary was passed before April 1, 1936, which included English, mathematics, a language other than English, an additional language or higher mathematics, chemistry, physics, botany, zoology, biology or geology, the Registrar is empowered to accept the certificate if passed at not more than two sittings. variations from these conditions must be submitted to the Pharmaceutical Council for consideration.

A person over twenty-five years of age may apply to be admitted to a special Preliminary examination; he must furnish such particulars of his education as the Council of the Society may require. The fee, including registration as apprentice or student, is

£4 4s. In general terms, the certificates submitted must be of equal value to those specified in the list. The list of certificates at present accepted is given below. Any student entering pharmacy and desirous of obtaining a Any student entering

degree through a university must pass its matriculation examination.

LIST OF CERTIFICATES ACCEPTED

The following is a list of the principal certificates accepted:-

The Final examination for a degree of any university in the United Kingdom approved by the Council.

Universities of Birmingham, Leeds, Liverpool, Manchester and Sheffield.—Joint Matriculation examination. School Certificate examination.

University of Oxford.—Responsions.

University of Cambridge.—Previous examination.

University of Durham.—Matriculation examination. First School Certificate examination. Higher School Certificate examination.

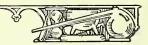
University of London.—Matriculation examination. General School Certificate examination. Higher School Certificate examination.

Victoria University of Manchester, University of Birming-ham, University of Liverpool, University of Leeds, and University of Sheffield, Joint Matriculation Board of.— Matriculation examination, School Certificate examination, Higher School Certificate examination.

Chemist and Druggist and Pharmaceutical Chemist Qualifications

- Notification and registration with the Pharma-ceutical Society of having passed an approved Preliminary examination.
- Apprenticeship (indentured), of 4,000 or 2,000 hours (for Ph.C.) to include practical training set out in the appendix attached to the indentures.
- 3. Preliminary Scientific examination in chemistry, including attendance at a recognised institution and an approved systematic course of instruction in chemistry, physics and biology of at least 25 hours weekly during each term of a session of three terms. (This examination may be taken before apprenticeship.)
- 4. On completion of Preliminary Scientific and apprenticeship attend at a recognised institution an approved course of instruction of not less than 25 hours weekly during each term of a session of three terms in pharmaceutical chemistry, pharmacognosy, pharmaceutics, physiology and forensic pharmacy.
- 5. At the age of 21, or thereafter, Chemist and Druggist Qualifying examination in pharmaceutics, pharmaceutical chemistry, pharmacognosy, physiology, forensic pharmacy or Pharmaceutical Chemist qualification in pharmaceutics, pharmacognosy, physiology, chemistry, and forensic pharmacy.





University of Bristol.—Matriculation examination, School Certificate examination, Higher School Certificate examination. University of Wales.—Matriculation examination.

Scottish Universities Entrance Board.—Preliminary examination.

Queens University of Belfast.—Matriculation examination. National University of Ireland.—Matriculation examination. Oxford and Cambridge Schools Examination Board.—School Certificate examination, Higher School Certificate examination. Oxford Delegacy of Local Examinations.—School Certificate examination, Higher School Certificate examination.

University of Cambridge Local Examination Syndicate.— School Certificate examination, Higher School Certificate

examination.

Central Welsh Board.—School Certificate examination, Higher School Certificate examination.

Education Department.—Leaving Certificate Scottish

Ministry of Education of Northern Ireland .- Senior Certifi-

cate examination.

Department of Education of the Irish Free State.—Leaving Certificate examination.

College of Preceptors.—Senior examination, Medical Preliminary examination.

Educational Institute of Scotland.—Medical Preliminary examination.

And various universities throughout the Empire.

THE COLLEGE OF PRECEPTORS, Bloomsbury Square, London, W.C.I, holds examinations for certificates four times a year at local centres, a list of which is issued two months before each examination. Entry forms, obtainable from the secretary of the College, must be filled up and returned six weeks before the day appointed for the examination. On the form the candidate indicates the subjects in which he desires to be examined, those required for pharmaceutical students being mentioned at the beginning of this section. The fees are best sent with the entry forms, but, if not, must be paid twenty-eight days before the examination begins. Candidates should obtain the regulations for examinations (post free) from the Secretary of the College, as the books to be a statical in contract of the secretary of the college. studied in some of the subjects vary from year to year. complete set of papers at previous examinations can be obtained from the College at 2s. 2d. post free.

EDUCATIONAL INSTITUTE OF SCOTLAND (Registrar's Office, 47 Moray Place, Edinburgh) holds an examination four times year in Edinburgh, Glasgow, Liverpool, London and Dublin. The fee is f_1 is., and should be sent to the Registrar with the form of application duly filled in. The Institute issues a form of application duly filled in. calendar giving the regulations, price 6d., and examination papers, price 1s., obtainable from the Registrar.

A certificate of having passed a preliminary examination complying with the conditions having been obtained, it should be cent to the Position the Physics of the Position of the Physics of the Physics of the Position of the Physics of the P

be sent to the Registrar, the Pharmaceutical Society, 17 Bloomsbury Square, London, W.C.I, accompanied by a fee of £2 2s., the student being then registered as an "apprentice or student"

Registration is insufficient in itself, articles of pupilage must be taken up and filed, copies of which can be obtained from the Registrar at the same time. Apprenticeship may be served with a pharmacist, firm, or body corporate, or in an institu-tion recognised by the Council of the Pharmaceutical Society, or in the laboratory of a wholesale house subject to the same approval. A practical course of training is now mapped out and is attached to the indentures, thereby becoming an integral part. The specified number of hours required to be spent in an open shop or approved public institution is 4,000. In addition, a recognised course of study must be taken before the Preliminary Scientific examination can be undertaken, and subsequently a further period in college for the Qualifying examination.

The Technical Examination

The Board of Examiners sits in London and Edinburgh in January, April, July and October for the purpose of conducting the statutory practical and any oral examination recognised. Prior to these times the written portion of the examinations must be taken at the appropriate centres. For

the Pharmaceutical Chemist examination the Board sits in January and July only. The first part, called the Preliminary Scientific, includes biology, chemistry and physics. second part includes pharmacognosy, pharmaceutics, pharmaceutical chemistry, physiology and forensic pharmacy. Its specific name is the Chemist and Druggist Qualifying examination. For the purpose of simplification the Pharmaceutical Chemist and Include a publication that the contraction and the purpose of simplification the Pharmaceutical Chemist and Include a publication that the contraction and the purpose of the purpose of simplification that the purpose of the purpose of simplification in Joseph Pharmaceutical publication in Joseph Pharmaceutical publicat Chemist qualification is dealt with separately under that heading

The Preliminary Scientific should be taken between the ages of eighteen and twenty-one, and may be taken before apprenticeship; the Qualifying examination can only be taken after

the age of twenty-one has been reached.

The fee payable for the preliminary Scientific is £6 6s., and the conditions are: The candidate must have spent the requisite academic terms in an institution approved for the purpose by the Pharmaceutical Society's Council. If a candidate is referred in one subject only he may re-enter for that one only. Two "refers" are equivalent to a failure in all. In addition, the Board of Examiners have now the power to impose further conditions (periods of study) on those who failed to satisfy the Board. The re-examination fee is £4 4s. A candidate who has failed to attend an examination at the appointed time must pay an additional fee of £2 2s. unless prior to the examination a medical certificate of unfitness is lodged with the Secretary of the Pharmaceutical Society.

Having passed each subject in the Preliminary Scientific and completed 4,000 hours in an open shop, approved public institution, or approved wholesale chemist's laboratory, and the necessary collegiate training for the Final examination, and reached the age of twenty-one, the candidate should send a birth certificate, together with another fee of £12 12s., and the necessary declaration of having completed the conditions, on the prescribed form, to the Registrar. examination is conducted on similar lines, and success in all subjects entitles the candidate to be registered as a chemist and druggist by examination on payment of the appropriate annual fee.

All candidates have the choice of being examined in the practical portion of the examination in London or Edinburgh, and they are required to state the venue desired when filling up the entrance form. The candidate's books showing the practical work in all subjects must be taken to the examination for inspection by the examiner should he so desire.

The Examination Syllabuses

The official syllabus of the Pharmaceutical Society for the Preliminary Scientific is set out, though examinations in lieu of this may be taken in approved institutions.

Preliminary Scientific

The examination is the same for chemist and druggist and pharmaceutical chemist, and the examination extends over three and a half days.

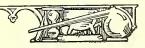
CHEMISTRY

An elementary knowledge is required of the following subjects:-

subjects:—

(a) The chief characteristics of chemical action, the distinction between elements and compounds; the laws of chemical combination by weight and volume; the hypothesis of Avogadro; kinetic theory of gases; theory of dilute solutions; ionisation; conductivity; acids, bases; solubility product; osmotic pressure; Raoult's law; chemical equilibrium and law of mass action; endothermic and exothermic reactions; equivalent weight; atomic weight and molecular weight; chemical formulæ and nomenclature; valency; the distinction between metals and non-metals, and the periodic classification of the elements. (b) The general characters of the non-metals; the chief methods of preparation and the typical reactions of the following non-metallic elements and compounds: Hydrogen, oxygen, ozone, water, hydrogen peroxide, chlorine, bromine and iodine, and their compounds with hydrogen and oxygen; fluorine, hydrofluoric acid, nitrogen, ammonia and ammonium compounds, the oxides of nitrogen, nitrous acid, nitric acid; sulphur, hydrogen sulphide, sulphurous and sulphuric anhydrides and acids, thiosulphuric acid; phosphorus, the oxides and oxy-acids of phosphorus, the chlorides of phosphorus, silicon, silica, boron, boric acid. (c) The general characters and classification of the metals, and the general methods of





forming oxides and salts; the sources, the usual method of extracting and the chief properties of the undermentioned metals, also the modes of preparation, properties, adulterations and contaminations of their principal compounds: Potassium, sodium, lithium, barium, strontium, calcium, magnesium, zinc, aluminium, iron, chromium, manganese, nickel, cobalt, arsenic, antimony, tin, copper, bismuth, lead, silver, mercury, gold and platinum. (d) Carbon, its oxides, methane, ethylene and acetylene. The methods of estimating carbon, hydrogen, oxygen, and nitrogen in organic compounds, and of obtaining molecular formulæ. The candidate is expected to solve simple problems relating to the weight and volume under different conditions of temperature and pressure of elements and compounds concerned in chemical reactions.

The whole of the syllabus in chemistry is to be treated in an elementary manner and as far as possible experimentally.

Practical Examination.—To exhibit a practical acquaintance with the methods of preparing the more important inorganic substances. To identify by chemical tests the more important non-metallic elements and their compounds, as well as the metals and salts indicated in the foregoing list. To analyse a mixture containing not more than two basic and two inorganic acid radicles. To be able to weigh accurately on a standard analytical balance involving the use of a rider. To show a knowledge of the principles of volumetric analysis and to prepare, standardise and use volumetric solutions of inorganic acids, alkalis, potassium permanganate, and silver nitrate.

Chemistry can only be learned practically. Unless a person's mind is given to synthesis and analysis and he practises the handling of apparatus, he may memorise a mass of theory but he will never become a chemist. Reports from the examiners on the candidates' work show that it is frequently the most elementary questions that are badly answered. In other cases there is lacking the art of expressing answers to simple questions so as to be easily understood. From the last report of the examiners it would appear that too many stock answers are given by candidates, that many calculations are not done accurately, and in titrations, though the method employed is well done yet in working out results arithmetical mistakes are made. It is well to impress on students the acquisition of the habit of accuracy.

BIOLOGY

This subject replaces the old "botany" syllabus. The theoretical portion is in one written session, and a session each is required for Part I (botany) and Part II (zoology), covering the practical and dissecting side.

Part I—Botany.—The form and function of the roots, the stem and the leaves of a green herbaceous plant and of a woody perennial plant and the effect of environment on their anatomy. The modifications of plant organs for special functions. The structure of the plant cell. Cell division. The structure, arrangement and functions of the tissues of Angiosperms. The structure of a typical flower and the function of its various parts. The fruit. The structure, dispersal and germination of seeds. The elementary facts of growth and nutrition including photosynthesis and respiration, and a consideration of the physiology of heterotrophic plants. The commoner foods found in plants; their digestion and utilisation. A general knowledge of the chief divisions of the vegetable kingdom as exemplified by a study of the life-history, structure and reproduction of the following:—

Chlamydomonas, Spirogyra, Fucus, Mucor, Agaricus, Dryopteris Filix-mas, Pinus and an Angiosperm. The principles of taxonomy as illustrated by a study of the following families of Angiosperms: Ranunculaceæ, Leguminosæ, Umbelliferæ, Solanaceæ, Compositæ, Liliaceæ.

Practical Examination.—The dissection, examination and description (exclusive of identification) of any plants or parts of plants. The making of microscopical preparations and the description of preparations illustrating the anatomy of plants. The conduct of, or comment on, experiments illustrating the fundamental life-processes of the plant.

Part II.—Zoology.—The structure and properties of the cell and the general characters and functions of the tissues including the epithelia, blood and lymph, and the nervous, muscular, connective and skeletal tissues. The general structure, physiology and life history of Amæba and Paramæcium. A comparison of these with plants. An outline of parasitism as illustrated by the life history of the malarial parasite and liver fluke. The general structure, vital activities and life history

of Hydra and Lumbricus, as illustrative of diploblastic and triploblastic invertebrata. The general structure and life history of Blatta as illustrative of insect organisation and development. The structure, life history and elementary physiology of Vertebrata as illustrated by Rana (excluding the skeleton) and Lepus. The general phenomena of sexual and asexual reproduction in animals. The history and characters of the germ cells, the chief types of segmentation of the fertilised ovum. The outline of the embryology of the frog and the chick. The elementary facts of heredity, variation and evolution.

Practical Examination.—The dissection, microscopical examination and description of specimens or parts of the animals mentioned above. The first results of the new examination in biology are not yet available, but reference can be made to the examiners' remarks on botany. The practical work, they say, is weak, and it should be impressed on the student that botany is essentially a practical science. If students tackle the subject from this point of view the results of the examination will be more satisfactory.

PHYSICS

Velocity, acceleration, mass, momentum, force, work, energy, gravity, centre of gravity; simple machines; pressure in liquids, the siphon, water pumps; principle of Archimedes. Boyle's law, compression and exhaust pumps; atmospheric pressure; surface tension; diffusion, osmosis. Temperature; thermometry; changes in volume of solids, liquids and gases with alterations of temperature; quantity of heat, specific heat; change of state, latent heat; melting and boiling points; vapour pressure; hygrometry; conduction, convection and radiation; relation between heat and work. Photometry; laws of reflection and refraction; formation of images by plane and spherical mirrors and lenses; the eye as an optical instrument; defects of vision and their correction by lenses; action of prisms on light; dispersion, colour. Properties of magnets; magnetic field, lines of force; law of force; the earth as a magnet. Simple phenomena of static electricity; potential, induction, distribution of electrification of conductors; influence machines; capacity; principle of condenser, Leyden jar. Electric currents, magnetic, chemical and heating effects; primary and secondary cells; current strength; electromotive force; Ohm's law; resistance, specific resistance; galvanometers, ammeters and voltmeters; metre bridge; potentiometer; induced currents.

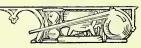
Practical Examination.—Simple exercises illustrating the above, including:—Use of vernier, screw-gauge, balance, hydrometer; measurement of time and oscillation. Determination of volumes by weighing in air and water, densities, specific gravities of solids and liquids; verification of Boyle's law. Determination of coefficients of expansion, melting points, boiling points, specific heats, latent heats, dew point. Tracing paths of rays; determination of refractive indices by slab and prism; focal lengths of mirrors and lenses. Tracing lines of force. Measurement of time of swing of a magnet; comparisons of magnetic moments and of field strengths. Comparison of electromotive forces and resistances. Use of galvanometer, ammeters and voltmeters. Electrolytic measurements.

It is interesting to note the reaction of the examiners to the work of the examinees. During the last year they admit that the standard of the theoretical and practical work has been maintained. It is suggested, judging by answers of candidates to questions on osmosis and surface tension, that more systematic attention might be given to this and related items mentioned in the Syllabus. They stress also that graphs should not only be plotted carefully but students should acquire skill in interpreting them correctly.

EXTERNAL EXAMINATIONS IN PHARMACY

Apart from the examinations of the Pharmaceutical Society's examiners as set out in the above syllabus, there is a proviso for the acceptance of certificates in lieu of the Preliminary Scientific. They are: (1) The Final or Intermediate examination of any University in England and Wales, and the corresponding examinations of any University in Scotland or any other university, providing the examinations have been approved by the Council of the Society. The first or subsequent examination





for any degree or diploma recognised by the General Medical Council, providing the examination has been approved by the Council of the Society. (2) The Higher School Certificate examination conducted by an examining body approved by the Board of Education for subjects taken as principal subjects. The fee on acceptance of these certificates is £2 2s., and subsequently the same regulations apply as to the Pharmaceutical Society's examinations.

Qualifying Examinations

PHARMACOGNOSY

The syllabus set out below is that now in being, though suitable arrangements are made for examination under the old syllabus for those who are entitled to be so examined owing to their previous entry.

The cultivation, collection, preparation for the market, the commerce in and the storage of crude drugs as illustrated by the drugs named in the list below.

The macroscopical characters, the biological and geographical sources, the commercial varieties and adulterants, the constituents and the qualitative chemical tests for the following drugs: -

Acacia Aconitum Agar Aloe Amylum Anethum Anthemis Asafætida Aurantii Cortex Balsamum Peruvianum Balsamuin Tolutanum Belladonnæ Folium Belladonnæ Radix Benzoinum Buchu Calumba Cannabis Cantharis Capsicum Cardamomum Carum Caryophyllum Cascara Sagrada Catechu Cera Flava

Cinchona Cinnamomum Coca Coccus Colchici Cormus Colchici Semen Colocynthus Colophonium Copaiba Coriandrum Creta Digitalis Folium Dryopteris Filix-mas Ergota Fœniculum Gelatinum Gentiana Glycyrrhiza Hamamelis Hyoscyamus Ipecacuanha Inomœa Talapa Krameria Limonis Cortex Linum

Lobelia Mel Myristica Myrrha Nux Vomica Opium Podophyllum Podophyllum Indicum Prunus Serotina Quassia Quillaia Rheum Savin Scilla Senega Sennæ Folium Sennæ Fructus Serpentaria Stramonium Strophanthus Styrax Tamarindus Tragacantha Valeriana Zingiber

The extraction of fixed and volatile oils as illustrated by the following: —Castor oil, clove oil, cod-liver oil, olive oil. more important classes of constituents of crude drugs with reference to their behaviour when used in making pharmaceutical preparations and when dispensed. The microscopy of starch, calcium oxalate and epidermal trichomes and the microchemical tests for cellulose, lignin, the materials used for filtering and the fibres used for surgical dressings.

Practical Examination.—The candidate will be required to examine, dissect, identify and describe, in the entire or broken condition, the drugs mentioned in the above list, by means of their macroscopical characters, by qualitative chemical tests, and by the microscopy of calcium oxalate and epidermal trichomes. To examine fibres and fabrics used for surgical

dressings, materials used for filtration, and starch.

The net dealing with characteristics of certain drugs is more widely drawn, and it is evident that something more than recognition and a knowledge of a few diagnostic characters will be required. In addition, we have the introduction of fibres and fabrics used for surgical dressings, materials used for filtration, and starch. The examiners in this subject are not quite as critical as in some others. They affirm that the work is fairly well done, but they suggest that attention should be paid to what is seen under the microscope rather than make the sketch fit some imaginary conception. The oral examination disappears, and the practical session is one of two hours.

Physiology

This subject follows on pharmacognosy, and the same remarks apply. Anyone trained under the old syllabus will not

be required to take this subject until after March 1, 1939. The syllabus sets out:-

The structure of the blood, coagulation; the transport of oxygen and carbon dioxide. The properties of cardiac, striated and unstriated muscle. The mechanism of the heart and valves. The coronary circulation. The effect of inflow and rate on the output of the heart. The importance and maintenance of the blood pressure. The structure of the glands of internal secretion. The effects following their removal, and the properties of extracts prepared from them, including (a) the pituitary body, anterior and posterior lobes, (b) the thyroid and parathyroid, (c) the pancreas, (d) the suprarenals, (e) the testicles and ovaries. The physiology of the alimentary tract including a knowledge of the control of salivary, gastric, pancreatic and biliary secretion, and of the movements of the alimentary tract. The chemistry of the common food substances, meat, eggs, milk and bread, and the properties of the digestive juices and bile.

Judging by the results in the examinations that have so far been held, candidates did fairly well. It is natural to assume that the examiners would exercise particular care in the assessment of marks, seeing that the teaching had to create a new atmosphere in pharmaceutical examinations. The teachers have met and conferred with each other on the experience gained and the construction of something useful for the training of the future pharmacist. At present there is no particular point for critical analysis either of the papers or the results. The examiners say on their first experience that the standard reached was not unsatisfactory—which is rather lukewarm praise. They stress that insufficient knowledge of the glands of internal secretion was shown. Time, doubtless, will

rectify this deficiency.

PHARMACEUTICS

The history of pharmacy from A.D. 1600. The principles involved in pharmaceutical operations including a consideration of the pharmaceutical application of the following:

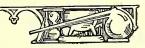
Vapour pressure, solution, ionisation, osmotic pressure, hydrolysis, viscosity, surface tension, distillation, sublimation, colloidal state. The galenical preparations included in the British Pharmacopæia, their biological and chemical standards, changes liable to occur in these preparations, and the means of preventing them. Enzyme action. The biology of bacteria in so far as it bears on the preparation of sterile solutions, vaccines, and on the performance of sterility tests. The preparation of such serums, vaccines and hormones as occur in the British Pharmacopæia. The compounding and dispensing of medicines. Surgical dressings and their standards. The interpretation of prescriptions and the translation of Latin prescriptions into English. Posology.

Practical Examination.—The candidate must be prepared to conduct ordinary pharmaceutical operations, including the making of the galenical preparations in the British Pharmacopæia, the dispensing of prescriptions, the making of sterile preparations; the detection of unusual doses and the completion of his preparations in a proper manner.

proper manner.

On the surface this subject, pharmacy, appears the most changed; the name becomes pharmaceutics so as to provide for the inclusion of certain things that might be said to be on circle. The syllabus is reconstructed entirely and a little history thrown in, though, at present, there is hardly anything in print that is helpful except Wootton's "Chronicles of Pharmacy." Instead of an attempt at setting out details of what class? the border-line of pharmacy rather than included within the of what should be taught, the general principles are given. The committee which drew up the report on the syllabus stated: "The changes in the syllabus for the existing subjects, apart from changes of content, are in the direction of ensuring that training will be based more upon principles rather than specific methods and substances, the British Pharmacopæia being used to provide illustrative examples rather than to form the basis of training." Though the Committee proposed to eliminate the oral portion, a short oral was finally reinstated. The new parts or those transferred from other subjects include vapour pressure, etc., biology of bacteria, serums, vaccines and hormones of the B.P., surgical dressings and their standards. The comments of the examiners are always interesting and helpful. The first report on the subject as here set out is not yet available. Not the least intriguing feature in anticipation will be the comparison of comments and results in 1935,





1936 and 1937 which may help in appraising the value of so many changes made in the pharmaceutical syllabus.

PHARMACEUTICAL CHEMISTRY

The general principles of inorganic chemistry with particular reference to those elements and compounds in frequent use in pharmacy: their preparation, properties and purification for pharmaceutical use. The general principles of organic chemistry involving the main types of aliphatic substances and the simpler aromatic compounds containing the benzene nucleus, with special reference to those of pharmaceutical importance. Pharmaceutical standards of purity and chemical tests of conformity therewith. The principles involved in the practical work of this syllabus.

Practical Examination. — The candidate will be required to show practical familiarity with the following in reference to their application to substances in frequent use in pharmacy.

The preparation of simple organic compounds such as chloroform, compounds such as Chrotoffin, ether, acetaldehyde, ethyl acetate, nitrobenzene and acetanilide. The identification by chemical tests of the salts of the simple organic acids; the identification or references. ence to class of simple organic com-pounds. The performance of the simple chemical tests used to limit the adulterations and contamina-tions which may occur in the in-organic substances, and in the simple organic compounds of pharmaceutical importance. The quantitative determination of quinine in iron and quinine citrate and of the alkaloidal content of simple solualkaloidal content of simple solu-tions of alkaloidal salts. Simple gravimetric analysis illustrated by the determination of moisture limits, sulphates, aluminium and iron. The volumetric determina-tions of simple chemical substances and of such when present in simple solutions. Alkalinity of glass. The use of the nitrometer illustrated by the estimation of organic nitrites. the estimation of organic nitrites.

While it must be admitted that examiners are too prone to talk about the bad shots rather than include praise when it is deserved, it must be conceded that this subject gives them more satisfaction than some others. There is greater elasticity in the form of the syllabus, which enables true teachers to make more effective their method of training. Details are always apt to cramp style;

greater freedom was generally taken, and the above syllabus gives it sanction. The examiners report that the practical work done is better than the theoretical. At the same time, greater attention should be paid to the impurities that may occur. Another important point is that marks on the standardisation of volumetric solutions are based on accuracy of results—which should be the red light to students.

FORENSIC PHARMACY

The candidate will be required to possess such information concerning the following enactments and the regulations made under them as is applicable to the practice of pharmacy in shop and hos-pital:—The Pharmacy and Poisons Acts, 1852 to 1933, the National Health Insurance Act, 1924, the Dangerous Drugs Acts, the Apother Carice Act, the Medicine Charmach the Research (agetian Julier realth Insurance Act, 1924, the Dangerous Drugs Acts, the Apothecaries Act, the Medicine Stamp Act, the Shops Acts (sections dealing with the sale of medicines), the Weights and Measures Acts, the Protection of Animals Act, the Sale of Food and Drugs Act, the Registration of Business Names Act, the Venereal Disease Act, the Therapeutic Substances Act, and the relevant sections of the Acts relating to the use of stills, the sale of spirits (including methylated spirit and medicated wines), the sale of abortifacients.

The true interest of this subject at the present moment is

the Poisons List, 1935. The immediate examinations should be interesting for all (perhaps excepting the student). Guides and books have been produced to lead the student and the pharmacist through the intricacies of the Poisons Schedules, but the C. & D. Poisons Guide still remains facile princeps.

Summary of Examination Fees

Apart from the fee for collegiate courses, the following are payable by pharmacy students:

Syllabus for Chemist & Druggist Examinations

(IN BRIEF)

Preliminary Scientific

BIOLOGY

1. Botanv
Morphology, including Anatomical Structure; Physiology,
Reproduction; Physical Effects of Light and Gravity, classification, dissection and description of plants within specified classes.

2. Zoology
The cell and general characters; functions and kinds of tissues; life-history of Amæba; Parameecium; Hydra; Lumbricus; Blatta. Parasitism; heredity; variation and evolution.

CHEMISTRY
Chemical Principles: Non-Metals and their Compounds;
Characters and Classification of Metals; Formation of Oxides
and Salts; Carbon and its Oxides; Knowledge of Estimation
of Carbon; Hydrogen, Nitrogen; Simple Chemical Problems.

PRACTICAL CHEMISTRY
Analysis of a salt containing not more than two Metals and two Acid Radicals; Identification and Knowledge of specified metals and salts; Principles of Volumetric Analysis and standardisation of solutions.

PHYSICS PHYSICS
Conservation of Energy; Gravitation, Balance, Pressures;
Diffusion, Vapour Densities; Thermometer, Barometer;
Specific Gravity. Mass, Force, Energy, Work; Forms of Matter;
Temperature and Pressures; Light: Reflection and Refraction;
Correction of Vision; Magnets: Static and Current Electricity;
Primary and Secondary Cells.

Qualifying

PHARMACOGNOSY

PHARMACOGNOSY
Pharmacopœial Drugs and others specified; Recognition, Classification; Sources, Structure, Chemical and Physical Characteristics; Active Principles.

PHYSIOLOGY
Blood; coagulation; oxygen; carbon dioxide. Varieties of muscle; heart and its valves; glands and secretion; coronary circulation; blood pressure; the alimentary tract.

PHARMACEUTICS
Laboratory Methods and Appliances; Preparation and Production of Galenicals; Knowledge of Assay; Sterilisation; Dispensing and Prescription Reading and Translation.

PHARMACEUTICAL CHEMISTRY

PHARMACEUTICAL CHEMISTRY
Preparation and properties of specified medicinal organic compounds. Pharmacopoial tests for impurities, assay, and volumetric determinations.

FORENSIC PHARMACY
Knowledge of Schedules, Conditions and Precautions of Sales of Poisons, and Laws Affecting the Keeping of Open

Registration as student, £2 28. Preliminary Scientific, £6 6s.

Re-examination in case of failure, £4 4s.; a person who has failed to attend, £2 2s.

Chemist and Druggist Qualifying examination, £12 12s.

Re-examination in case of failure, £6 6s.; a person who has failed to attend, £3 3s.

Pharmaceutical Chemist Qualifying examination, £12 12s.

Those about to enter the calling should be informed as to the conditions for a chemist and druggist qualification, and under competent advice, parents and guardians should weigh carefully the advantages and disadvantages of the method of procedure. The conditions of the chemist and druggist qualification are dealt with under the appropriate heading. Two ways are possible for the pharmaceutical chemist qualification, one through the examinations of the Pharmaceutical Society and the other through the University of London or any other recognised university. The training and examinations of London University include both internal and external students.

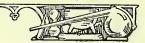
The entrance examinations are the same as those of the chemist and druggist qualification or such as are accepted by the particular university, and after registration the question of apprentice-ship before or after the Preliminary Scientific examination should be settled. The Prelimi-

nary Scientific is the same for both qualifications. At this point a decision should be made whether the chemist and druggist course is to be taken or that of the pharmaceutical chemist. The process of passing from the chemist and druggist to the pharmaceutical chemist is now fairly straightforward. The examination for the pharmaceutical chemist qualification is held in January and July. The regulations require apprenticeship under similar conditions to those of the chemist and druggist. The course of training in college consists of two sessions (two academic years) of not less than twenty-five hours weekly of three terms in pharmaceutical chemistry, pharmacognosy, pharmaceutics, forensic pharmacy and physiology.

Syllabus for the Pharmaceutical Chemist Qualifying Examination

The Pharmaceutical Chemist examination, by rearrangement of the syllabus, will occupy eight days against nine under the old curriculum. Physiology has been introduced, theoretical and practical, but all those who have presented themselves for examination before June 1, 1937, need not take physiology. This concession lapses after March 1, 1940.





PHARMACEUTICAL CHEMISTRY

The history of Chemistry from 1750 A.D.

The principles of physical chemistry treated in an elementary manner with references to their pharmaceutical application, including the physico-chemical properties of gases, liquids and solids; equilibria and the law of mass action; catalysis; thermo-chemistry; the properties of dilute solutions; osmosis; molecular weight determinations; colloidal state; adsorption and absorption; electrical conductivity; ionisation; hydrolysis; strength of acids and bases; indicators; the determination and significance of $p_{\rm H}$ values; refractivity; optical rotation; surface tension and viscosity; boiling points and boiling ranges; distillation of liquid mixtures. The general principles of inorganic chemistry with particular reference to those elements and compounds in frequent use in pharmacy; their preparation, properties and purification for pharmaceutical use. The general principles of organic chemistry involving the main types of carbon compounds extended by a more detailed treatment of those compounds in frequent use in pharmacy and in-cluding the fixed oils and fats, waxes; soaps; glycosides; ureides and urethanes; heterocyclic compounds and the characters, methods of extraction, preparation and purity of the important alkaloids; purines; proteins; alicylic compounds, terpenes and the more important constituents of essential oils and related products; medicinal dyes, organometallic compounds; the crystallisable hormones and vitamins; synthetic drugs. The principles of qualitative analysis of chemical substances and the chemical assay processes of crude drugs and pharmaceutical preparations. Pharmaceutical standards of purity and chemical tests of conformity therewith.

PRACTICAL EXAMINATION

The candidate will be required to show practical familiarity with the common methods of experiment, including the following and their application to substances in frequent use in pharmacy:—

The preparation of inorganic and organic compounds. The identification, or reference to class, of substances in the pure state or in admixture; the detection and identification of the impurities which they may contain. The determination of the physical constants used as criteria of purity. The quantitative analysis of inorganic and organic substances; the quantitative determination of the active constituents in drugs, pharmaceutical preparations, essential oils and other products that are amenable to chemical assay.

Chemistry from all parts of the old syllabus has been included; a comparison with previous layouts will show that the subject has been brought in closer touch with pharmacy and greater details given, but the margins are wide. The examination consists of two written sessions and two practical, and the usual custom to consult books in the practical remains, as well as bringing laboratory books.

PHARMACEUTICS

The principles involved and the apparatus used in pharmaceutical operations in general use by practising pharmacists and by manufacturers. The preparation of medicated surgical dressings. The candidate will be required to have such a knowledge of French or German as will enable him, with the aid of technical dictionaries, to translate into English passages from either French or German pharmacopæias.

The syllabus and examination in pharmaceutics harmonises with that of the Chemist and Druggist examination. The dispensing of medicines could be finished in the first year, which would ease the stress of the final examination. The syllabus on pharmaceutics in the Chemist and Druggist course should be consulted, as only the following items are additional for the pharmaceutical chemist qualification. It illustrates how it will in future be easier to pass from the chemist and druggist qualification to that of Ph.C. if anyone is so desirous.

PRACTICAL EXAMINATION

The candidate must be prepared to conduct ordinary pharmaceutical operations, including the making of galenical preparations, the dispensing of prescriptions, the detection of unusual doses, and the completion of his preparations in a proper manner; to prepare sterile solutions, to perform tests

for sterility; to prepare bacterial vaccines, including the enumeration of organisms in a suspension.

PHARMACOGNOSY

The change in this subject is due to an attempt to modernise it, and it follows the lines shown in the Chemist and Druggist examination with the additions set out below: one written session is planned, and two practical replace the former single session.

To prepare for microscopical examination of the following crude drugs, to describe their structure, to identify and describe their powers and to detect adulteration in them:—

Acacia Coriandrum Lobelia Aloe Myristica Nux Vomica Creta Amylum Digitalis Folium Belladonnæ Folium Ergota Quassia Cardamomum Fœniculum Rheum Caryophyllum Cascara Sagrada Gentiana Scilla Glycyrrhiza Sennæ Folium Catechu Hyoscyamus Ipecacuanha Cinchona Stramonium Cinnamomum Jalapa Linum Tragacantha Colocynthis Zingiber

The methods used for the microscopical examination of crude drugs, including the isolation and identification of tissues and cells. Micro-chemical tests for tissues and cell contents. Microscopical measurements.

The evaluation of crude drugs.

PRACTICAL EXAMINATION

The candidate must be prepared:—

To recognise crude drugs in frequent use in pharmacy.

PHYSIOLOGY

The first examination on this subject was in July 1936, and consisted of one written paper and one practical. The material set out below is in addition to that given under the Chemist and Druggist examination. It should be noted that some pharmacology is introduced here, and there is one session of practical work in the examination.

The enumeration of red cells.

The nervous control of the heart and the function of the carotid sinus.

The control of the blood supply to the organs of the body. The mechanism of respiration and its control; action of vagus; the effect of (a) oxygen, (b) carbon dioxide, (c) nitrogen, and (d) carbon monoxide.

gen, and (d) carbon monoxide.

The physiology of the skin, loss of heat and sweating; the kidney including the chemistry of urine. Detection and estimation of principal, normal and abnormal constituents.

Nerve cells and fibres. The synapse. Spinal reflexes. Function of medullary centres. Effect of removing the cerebrum. Motor cortex and pyramidal tracts. Function of corpus striatum. General arrangement of fibres entering and leaving the spinal cord, including the sympathetic chain and the peripheral connexions of the vagus and sympathetic nerves.

The physiology of mammalian reproduction including the implantation of the fertilised ovum and the function of the placenta.

The action of the following drugs:—chloroform, ether, alcohol, bromides, hyoscine, atropine, morphine, strychnine, caffeine, digitalis, nitrites, acetylsalicylic acid. The general mode of action of bitters, purgatives, emetics and expectorants, astringents, antacids.

PRACTICAL EXAMINATION

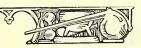
The candidate must be prepared:

To recognise and describe with diagrams, microscopic preparations of any tissues or organs mentioned in the foregoing syllabus. To show his acquaiutance with the methods employed for the demonstration of fundamental physiological processes, as laid down in the foregoing syllabus, and to carry out such chemical manipulations or simple experiments as are comprised therein.

FORENSIC PHARMACY

In this subject there is no variation from the requirements in the Chemist and Druggist examination.





Diploma in Biochemical Analysis

A diploma is granted by the Pharmaceutical Society in this subject after a systematic course and subsequent examination. The fee for the examination is £5 5s.; the examination is held in London and Edinburgh in April of each year, the last day of entry being March 1. The period for an approved course of instruction extends over three months, or a part-time course over six months. Proof must be given of the training. Usually the lectures, followed by practical work, are given in the evening. The examination consists of a three-hours' written paper, two three-hours' practical work, and a short oral. Original laboratory notebooks must be available for inspection. The syllabus gives the details of the chemical examination of urine, blood and cerebrospinal fluid; milk analysis, gastric analysis, analysis of fæces; principles of basal metabolism with metabolism experiments; renal efficiency tests; blood-sugar curves; acidosis and alkalosis; chemical tests of efficiency of liver and bile passages and pancreatic efficiency. Training takes place at 17 Bloomsbury Square (under G. A. Harrison, M.D., and H. E. Archer, M.R.C.S., F.I.C., Ph.C.); and in Edinburgh, Glasgow and Manchester. Candidates must be members of the Pharmaceutical Society.

Diploma in Pharmaceutical Analysis

The D.P.A.Pharm.Soc. is awarded after a course of training in pharmaceutical analysis. Part I extends over one academic year in the case of a day course or two years in case of partime or evening. Part II includes not less than two years in a pharmaceutical analytical laboratory. The places for training must be approved. The examination takes place in London in July and the fee is £5 5s. Candidates must be members of the Pharmaceutical Society who were registered as pharmaceutical chemists not later than the third year prior to the year of entry. The syllabus includes chemical analysis; physical methods applied to apparatus; examination of drugs and galenicals; disinfectants; infants' foods; water; urine; writing of reports; general knowledge of legal requirements governing the sale of drugs, medicines and poisons. There are special regulations which only apply to persons registered before February 1, 1933, giving concessions in suitable cases for the elimination of routine systematic training: application should be made to the Registrar, Pharmaceutical Society, 17 Bloomsbury Square, London, W.C.I.

University Examinations in Pharmacy

LONDON

In order to be admitted to a degree of B.Pharm., London, either as an internal or external student, candidates must (1) matriculate in one of the ways provided by the regulations, (2) pass the Intermediate examination in science, (3) have followed an approved course of study under recognised teachers of the University and in approved institutions. The fee for each examination is £6 6s. Application for copies of the regulations should be made to the Academic Registrar, University of London, South Kensington, S.W.7, or for an external student to the External Registrar.

The Intermediate examination of the University for external and internal students is set in two papers and a "practical" in each subject. Chemistry includes methods which lead to the discovery of the composition of common natural materials; determination of molecular weights, chemical laws and processes. In the practical: Quantitative, gravimetric, and volumetric work. Notebooks must be available for inspection

by the examiners.

In Physics: The properties of solids, liquids and gases; principles of heat, sound and light, and the properties of

magnetism and electricity.

Botany: Characteristics of angiosperms, gymnosperms, and specified natural orders. Pteridophyta, bryophyta, algæ and fungi, together with elementary physiology. In the practical will be included dissection and examination of parts of plants.

Zoology: The fundamental facts and laws, including specified types. General organisation of types, biological laws, structural phenomena, reproduction and diagnostic characteristics

of lower forms of life. In the practical: Parts of the animals selected will require description, and some dissection is expected.

Biology: This is an alternative subject to zoology. It includes the differences between living and non-living matter; cells, integration, differentiation and division of labour; Enzyme action, transformation of energy in living matter; nutrition, stimulus, response, movement, chemical co-ordination and general mechanisms. Reproduction; embryo and heredity. In the practical: Appropriate physiological experiments, dissection, microscopy and elementary embryology.

The B.Pharm. degree Final examination is the same for external as for internal students, covering pharmaceutics, pharmaceutical chemistry, pharmacognosy, and physiology, and is similar to the syllabus for the Pharmaceutical Chemist qualification, minus forensic pharmacy. A revised syllabus in zoology will come into force in 1938. The degree cannot be taken until three years after matriculation. The syllabus in the Ph.C. is drawn up by mutual agreement between University of London representatives and the Pharmaceutical Society.

A degree granted by the University does not entitle to

A degree granted by the University does not entitle to registration by the Pharmaceutical Society, but Regulation 29 provides that any registered apprentice or student who has served the period of practical training and produces to the registrar a notification of having passed the Final examination for the degree of bachelor of pharmacy of the University of London, or a corresponding degree of any other University approved by the Pharmaceutical Society's Council, shall be deemed to have passed the Pharmaceutical Chemist Qualifying examination in the subjects set out on the final certificate, and shall be entitled to enter the examination of the Society in forensic pharmacy and, on passing, be entitled to registration.

MANCHESTER

In Manchester, for the B.Sc. (Pharm.) degree, candidates must first pass the University Matriculation examination or its equivalent, which examination should include mathematics and mechanics. They should then attend courses in chemistry, physics, botany and zoology, and present themselves for the Intermediate examination in these subjects at the end of the first year. Candidates who have offered mathematics in place of zoology attend a short three-months' course in zoology in the second year. Candidates before proceeding to the Final examination must present certificates of having attended satisfactorily during the second and third years approved courses in chemistry, botany, pharmacognosy, pharmaceutics and pharmaceutical chemistry, physiology, and short courses in bacteriology and in methods of biological assay. They must also present satisfactory evidence that they can read scientific literature in German by passing a language test in this subject. They are required to pass the Final examination in the subjects of botany and pharmacognosy, chemistry and pharmaceutical chemistry, physiology, and pharmaceutics. This degree is accepted by the Pharmaceutical Society in lieu of the Ph.C. Qualifying examination except in the subject of forensic pharmacy. The cost of a degree course varies with the subjects chosen and with the nature of the degree, but the pharmacy. average fees for an ordinary B.Sc. degree course amounts to 42 a session. Full particulars may be obtained from the Pharmaceutical Department, University of Manchester.

Wales

The University of Wales confers the Degree of Baccalaureus in Pharmacia (B.Pharm.), after the completion of a course of study divided into two parts.

The first part, extending over one year, is pursued at any one of the four constituent colleges of the University. In certain circumstances, it may be pursued at the Welsh College of Pharmacy.

The second part, extending over two years, is pursued at the Welsh National School of Medicine, in association with the Welsh College of Pharmacy. The Welsh College of Pharmacy is a full-time department of the Technical College, Cardiff. Principal: J. C. Jones, B.Sc.

Courses may also be provided which will enable students,

Courses may also be provided which will enable students, otherwise qualified to do so, to enter for examinations for degrees and diplomas of other examining authorities. The next session commences in October. Further particulars may be





obtained from the Secretary, The Welsh National School of Medicine, 10 The Parade, Cardiff.

GLASGOW

In Glasgow, candidates must first pass the Preliminary examination. In not less than three academic years they must attend courses of Instruction at the University or the Royal Technical College, and must have been "practically engaged in the operations of pharmacy." The regulations may be obtained from Jackson, Wylie & Co., 73 West George Street, Glasgow.

BELFAST

The Queen's University confers the degree of B.Sc. in Pharmaceutics. Students desiring further information should apply to the Registrar of the University.

Teaching Institutions

Schools and institutions recognised by the Pharmaceutical Society for the preparation of students for the Preliminary Scientific examination or for the Chemist and Druggist Qualifying and Pharmaceutical Chemist Qualifying examinations, or for all three, are to be found in the following centres:—

ENGLAND AND WALES

LONDON

The College of the Pharmaceutical Society University of London

17 Bloomsbury Square, W.C.1

Dean: Professor J. H. Burn, M.A., M.D. The course for the Chemist and Druggist examination begins on October 2; fee for the course, £47 12s. 6d. The two years' course for the B.Pharm. and Pharmaceutical Chemist examination begins on October 6; fee, £47 12s. 6d. for each year. The above fees include subscriptions to the Students' Association and the University of London Union. Students will be given special instruction in methods of sterilisation and in the preparation and testing of biological products. They will have opportunity to see the work of the pharmacological laboratories. A course of instruction for the examination for the Diploma in Bio-Chemical Analysis will be given on two evenings weekly from October to April; fee, £10 10s. Inquiries should be addressed to the Dean.

Chelsea Polytechnic School of Pharmacy

Manresa Road, Chelsea, S.W.3

Principal: F. J. Harlow, M.B.E., Ph.D., B.Sc., A.R.C.S. The School of Pharmacy includes modern and well-equipped laboratories for the teaching of practical pharmacy, pharmacognosy, pharmaceutical chemistry, pharmaceutical research, pharmaceutical bacteriology, and large-scale galenical manufacture. Day courses for the Preliminary Scientific, Chemist and Druggist, Pharmaceutical Chemist, and Bachelor of Pharmacy examinations commence on September 20, the fee for a full-time day course being £8 per term or £21 per session. Matriculated students may attend B.Pharm. courses as internal or external students of the University of London. A short course on surgical instruments and dressings will also be held during the session. Prizes are presented annually to the most successful students in each course, and various scholarships are awarded. Full particulars from the Secretary, Chelsea Polytechnic, S.W.3.

Gordon Hall School of Pharmacy for Women

Drayton House, Gordon Street, W.C.1

Courses of training in pharmacy and dispensing. Particulars from the Principals.

London College of Pharmacy

361 Clapham Road, S.W.9

Principal: Irvine G. Rankin, B.Sc., Ph.C., D.B.A. Nine months' full-time courses for Preliminary Scientific and Chemist and Druggist Qualifying examinations. Revision courses.

Evening classes for revision: Tuesday, Wednesday and Thursday. Courses of preparatory study by post can be taken by apprentices and juniors at any time before entering College. Large botanical and herb garden. Session commences October 6.

Norwood Technical Institute

Knight's Hill, West Norwood, S.E.27

Principal: L. N. Coombs, B.Sc., A.I.C. Head of Science Classes: J. Dimmick, B.Sc., A.I.C. Full-time day course and day and evening part-time courses for Preliminary Scientific, Inter. B.Pharm. and Pre-Medical examinations. Also classes in organic chemistry suitable for pharmacy students. Session commences September 20. Fee: Full-time course, £5 per term (London students); out-County students should apply to the Principal. Part-time classes, from 7s. 6d.

The South of England College of Pharmacy

186 Clapham Road, S.W.9

Principal: H. Lucas, Ph.C.. F.C.S. Nine months' course for the Preliminary Scientific examination, fee £31 10s. Nine months' course for the Chemist and Druggist Qualifying examination, fee £31 10s. Revision courses for both examinations start in October, January, April and July. Fee: £10 10s. a term.

West Ham Municipal College

Principal: H. Baker, Ph.D., M.Sc. Evening courses for the Preliminary Scientific examination, commencing September 20. Fees, West Ham, East Ham, Middlesex and London students, £1 per session. Others, £2.

Westminster College of Pharmacy

190 Clapham Road, London, S.W.9

Principal: P. H. Woodnoth, Ph.C., F.C.S. The College has discontinued the day classes for the examinations of the Pharmaceutical Society and now specialises in the provision of preparatory courses of study by means of correspondence classes. These courses are provided for the Preliminary Scientific and Chemist and Druggist Qualifying examinations, and are used prior to attending approved courses of instruction. Full lecture course fee, covering a period of two years from date of commencement, £1 11s. 6d.; individual subjects may be taken at proportionate fees. Arrangements are also made, when required, to test the progress of the student by means of test papers at intervals. Revision students are catered for by the provision of a special series of test papers. A series of twelve papers is provided at a fee of £1 11s. 6d. The original staff is retained for the correction of these papers.

Wimbledon Technical College

Gladstone Road, S.W.19

Classes for Preliminary Scientific examination. Session commences September 20, 1937. Particulars from the Registrar.

Woolwich Polytechnic

Woolwich, S.E.18

Principal: E. Mallett, D.Sc., A.M.Inst.C.E., M.I.E.E., F.Inst.P. Approved by the Pharmaceutical Society for the Preliminary Scientific examination. Particulars from the Secretary.

PROVINCES

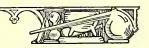
Aberystwyth University College of Wales

Principal: Ifor L. Evans, M.A. (Cantab.). Courses in chemistry and botany adapted to the requirements of candidates for examinations of the Pharmaceutical Society. Prospectus from the Registrar.

Barnsley Technical College

Principal: D. Paton Grubb, B.Sc. (Edin.), M.Eng. (Sheff.) A.R.S.M. Recognised for the Preliminary Scientific examination. Full-time course, five days a week, one session, fee £15 15s. Part-time course, one whole day per week, £3 3s. Additional evening or day instruction in chemistry, physics or biology.





Barrow-in-Furness Technical College

Evening classes in chemistry, September to April. Fees: 7s. 6d. to 15s. Day and evening courses for apprentices, September to July. Fees: Course, including chemistry, physics and botany, £3 3s. Particulars from the Principal.

Birmingham Central Technical College

Principal: D. S. Anderson, Ph.D., B.Sc., M.I.Mech.E., M.I.A.E. Head of Pharmacy Department: E. G. Bryant, B.Sc., D.Pharm., Ph.C. Lecturers:—Pharmacy: T. L. Bowyer, A.I.C.; W. S. Lean, B.Pharm., Ph.C.; J. Priestman, B.Sc., Ph.D.; C. L. M. Brown, Ph.C.; R. E. Essery, B.Sc., F.I.C.; Biology: E. J. Moore, M.C., M.Sc.; C. A. Cosway, B.Sc.; Mrs. M. Moore, B.Sc.; N. E. Hickin, B.Sc.; A. E. Oldbury, B.Sc. Full-time courses for the Preliminary Scientific, Chemist and Druggist Qualifying and Pharmaceutical Chemist Qualifying examinations of the Pharmaceutical Society, and for the Intermediate Pharmacy and Final B.Pharm. examinafor the Intermediate Pharmacy and Final B.Pharm. examinations of the University of London. Part-time course for Intermediate examination. Medals and prizes awarded in all the subjects of each course. Courses commence on September 20. Full particulars on application to the Principal, Technical College, Suffolk Street, Birmingham, 1.

Birmingham (Handsworth) Technical College

Principal: A. Robson, B.Sc., B.Com., M.I.Mech.E. Special courses for apprentices, also for professional preliminary examinations. Fees, day or evening: 8s. 6d. to 13s. 6d. for courses in chemistry, physics and botany.

Bolton Municipal Technical College

Principal: J. W. Simpkin, M.Sc. Recognised for Preliminary Scientific examination. Fees: Chemistry courses, 5s. to 15s. per session; pharmacy courses, £2 2s.

Bournemouth Municipal College

Principal: C. E. Walker, M.A., B.Sc. Recognised for Preliminary Scientific examination. Day classes, fee £6 6s. per term; reduced fees for part time. Evening classes.

Bradford Technical College

Principal: H. Richardson, M.Sc. Head of Department of Pharmacy: F. N. Appleyard, B.Sc. (London), Ph.C., F.I.C. Lecturer in Pharmaceutical Chemistry: C. G. Lyons, M.A. (Cambridge), Ph.D. Lecturer in Pharmacognosy: D. W. Shaw, B.Sc., Ph.C. Lecturer in Physiology: R. E. Robinson, B.A. (Cambridge), M.R.C.S., L.R.C.P., D.P.H. Lecturers in Pharmacy: A. T. Moorhouse, B.Pharm., Ph.C., and J. W. Cooper, Ph.C. Lecturer in Bacteriology: M. A. C. Buckell, M.B., B.S., D.P.H. Recognised for the Preliminary Scientific, Chemist and Druggist Qualifying and Pharmaceutical Chemist Qualifying examinations, and by the University of London for the B.Pharm. degree. Evening course for the Pharmaceutical Society's Diploma in Biochemical Analysis. Post-graduate evening courses in microscopy of food and drugs and methods evening courses in microscopy of food and drugs and methods of sterilisation. Registration commences on September 13 for evening courses and on September 21 for day courses.

Brighton Technical College

Head of the School of Pharmacy: H. B. Mackie, Ph.C., B.Pharm. Full-time course for the Preliminary Scientific, the Chemist and Druggist Qualifying, the Pharmaceutical Chemist Qualifying and B.Pharm. examinations. Fee for any day £24 for a session, or £9 per term. Separate laboratories for dispensing pharmaceutical chemistry, galenical pharmacy and pharmacognosy. Applications for admission should be made as early as possible to the Principal.

Bristol Merchant Venturers' Technical College

Principal: Andrew Robertson, D.Sc. Head of Pharmacy Department: D. J. Williams, B.Sc., Ph.C., Barrister-at-Law. Lecturers: General and Forensic Pharmacy, Head of Department. Pharmacy, W. Cooper, Ph.C. Pharmaceutical Chemistry, G. H. Moore, Ph.C., A.I.C. Botany, Miss E. E. M. Beer, B.Sc. Chemistry and Physics, H. J. Willavoys, M.Sc., A.I.C. Zoology and Physiology, H. Gorvett, Ph.D. Full- and

part-time courses for the Preliminary Scientific and Chemist and Druggist Qualifying examinations. Fees (including deposit, etc.), £13 10s. 6d. and £27 10s. 6d. respectively.

Cardiff Technical College

Principal: J. C. Jones, B.Sc., A.M.Inst.C.E. Head of Welsh College of Pharmacy: Rees Vernon Lloyd, B.Pharm. (Lond.), Ph.C. Day courses for Preliminary Scientific and Chemist and Druggist Qualifying examinations, commencing in October. Two years' course for Pharmaceutical Chemist Qualifying examination, and three years' course for B.Pharm. (Wales) degree. Fee for each course (October to July), £20. Parttime course for Diploma in Biochemical Analysis (held at Welsh National School of Medicine): fee, £10 10s. Open scholarships (tenable for three years) are offered by the College Committee.

Darlington Technical College

Principal: J. W. Angles, M.Sc., M.I.Mech.E. Evening pharmacy course. Fees: 20s. Recognised for Preliminary Scientific examination (old regulations).

Derby Technical College

Principal: W. A. Richardson, O.B.E., B.A., D.Sc., B.Sc. (Eng.). Day and evening classes. Fees: Full-time course, £3 3s. per term; part-time day courses (one day per week and evening), £1 is. per session inclusive. Recognised for Preliminary Scientific examination.

Exeter University College

Day classes for the Preliminary Scientific examination. Fees are printed in the general prospectus.

Halifax Municipal Technical College

Principal: B. R. Heasman, M.Sc. (Lond.), A.I.C. Instruction for Preliminary Scientific examination. Fee for part-time day and evening course under the old regulations, frios. Fee for full-time day course under the new regulations, £9 9s.

Huddersfield Technical College

Principal: J. F. Hudson, M.A., B.Sc. Full- and part-time courses for Preliminary Scientific examination and for Inter-B.Pharm. examination. Fee: full time, £12 12s. a session; part time, £3 3s.

Hull Municipal Technical College

Head of Chemistry Department: L. Balmforth, B.Sc., F.I.C. Recognised for the Preliminary Scientific examination. Classes in inorganic, organic and physical chemistry, physics, botany and materia medica. Courses in materia medica and dispensing for students who have already passed the Preliminary Scientific examination and wish to continue their studies before taking their final at the selected college.

Kingston-upon-Thames Technical College

Head of Pharmacy Department: H. P. Starck, M.A. (Cantab.), Hon. Natural Science Tripos, C.T.D. Full-time day, part-time day, and evening classes for the Preliminary Scienfife and Inter. B.Pharm. examinations. Fee for day session, f15; for part-time day session, f5; for evening session, f1 ros. Day students may take additional evening lectures without further fee. Pharmaceutical chemistry is taken on Wednesday afternoons and biology or physics (heat and light) on Thursday afternoons at an additional £1 per session per half-day for evening students. Session commences on September 20.

Lancaster, Storey Institute Technical College

Pure and Applied Chemistry Departments, Headmaster: Clifford Chew, M.Sc., F.I.C. Day and evening courses recognised by the Pharmaceutical Society.

Leamington Technical School

Recognised for the Preliminary Scientific examination. Chemistry, Mondays; Biology, Wednesdays; Physics, Fridays.





Leeds College of Technology

Principal: J. H. Everett, B.Sc. Day course for the Preliminary Scientific and other examinations. Fee: £18 18s. per session. Part-time day courses from £3 3s. per session. Evening courses from ros. to 42s. per session, in chemistry (National Certificate), oils and fats, leather, dyeing, gas, chemical engineering, synthetic plastics, and courses for London B.Sc.

Leeds University

Courses of study for the Chemist and Druggist Qualifying and the Pharmaceutical Chemist examinations commence on October 1. Fee: £31 10s. per session. Candidates for the Preliminary Scientific examination are admitted to the Science Degree courses in the required subjects.

Leicester College of Technology

Principal: L. W. Kershaw, B.Sc., A.M.Inst.C.E. Head of the Department of Pharmacy: A. R. G. Chamings, B.Pharm., Ph.C. The School of Pharmacy will occupy a new suite of laboratories during the coming session. The provisions include (in addition to the normal services) hot water, steam, and vacuum and distilled water laid on. The Chemist and Druggist course includes window display (for which a modern shop window has been provided). Sterilisation and bacteriological courses continue to be conducted in collaboration with the dispensaries and pathological laboratories at the Leicester Royal Infirmary.

Leicester, The Wyggeston Grammar School

Headmaster: T. Kingdom, M.A. Recognised for Preliminary Scientific examination; three-term session from September to July. Fee, £18 18s. for the session.

Liverpool, City Technical College

Principal: R. R. Butler, M.Sc., F.I.C., F.C.S. Courses for the Preliminary Scientific examination. Part-time courses (three afternoon or evening classes weekly): Fees, £1 to £2. Full-time courses: Fees, £12 12s. per lesson; £5 per College term. Special fees for single subjects. Full particulars from the Principal.

Liverpool School of Pharmacy

Principal: H. Humphreys Jones, F.I.C., F.C.S., Ph.C. Preparation for the Preliminary Scientific and Qualifying Chemist and Druggist examinations. Revision course for the October examinations commenced August 4. Nine months' course for the Preliminary Scientific examination and nine months' course for the Qualifying examination commence on October 5.

Manchester University

Senior Lecturer in Pharmacy: H. Brindle, B.Sc., F.I.C., Ph.C. Courses for the Chemist and Druggist and Pharmaceutical Chemist Qualifying examinations. Three years' course for the B.Sc. Degree in Pharmacy. A part-time course is hold on Wednesdays for the Pharmaceutical Society's Diploma in Biochemical Analysis. Particulars from the Registrar or the Senior Lecturer in Pharmacy.

Norwich Municipal Technical College

Principal: H. W. Howes, B.A., M.Sc., Ph.D., F.R.A.I. Recognised for Preliminary Scientific examination. Combined day and evening courses. Also part-time courses in chemistry and pharmaceutical Latin for those who have passed the Preliminary Scientific examination. Session opens September 16. Fees, £1 to £9 9s. per session.

Nottingham University College

Head of School of Pharmacy: A. O. Bentley, Ph.C. Fulltime day course for Chemist and Druggist examination; fee, £31 15s. Two-year course for B.Pharm. and Ph.C. examinations; fees, £31 15s. each session. Five days per week course for one year for Preliminary Scientific examination; fee, £26 10s. Course for Pharmaceutical Society's Diploma in Biochemistry (four half-days per week); fee, £10 10s. for two terms

Oxford City Technical School

Recognised for the Preliminary Scientific examination. Evening courses in chemistry, physics and botany, extending over four years. Inclusive fee per session, 20s. Special course in organic chemistry, 10s.

Plymouth and Devonport Technical College

Principal: A. R. Boeree, M.A., B.Sc. (Oxon.). F.I.C. Part-time courses for Preliminary Scientific examination held three afternoons or evenings each week. Fee, £4 per session. Full-day courses for registered students. Fees, £18 15s. to £25.

Portsmouth Municipal College

Principal: Leonard B. Benny, M.A. (Cantab.), B.A. (Lond.). Approved under the regulations of the Pharmaceutical Society and the London University Classes commence on September 13. Fees: Full-time courses, £15 15s. for Portsmouth residents, £21 for others.

Preston, Harris Institute

Affiliated to the Universities of Manchester and Liverpool. Full-time day course for the Preliminary Scientific examination. Session begins in September. Fees: £10 10s. per session for the three subjects or £3 10s. per term. Full-time day course for Inter. B.Sc. in science or engineering. Evening courses in chemistry, physics, biology and mathematics for Inter. and Final B.Sc., etc.

Salford Royal Technical College

Principal: John A. Hartley. Recognised for Preliminary Scientific examination. Full-time day course; fee, £10 10s. per session. Part-time day and evening classes under the old regulations; fees, day, £3 3s.; evening, 15s. to 25s. per session.

Sheffield Central Commercial College

Principal: W. B. Marshman. Recognised for Preliminary Scientific examination. Evening classes. The course extends over three years, the fees being: first year, 17s. 6d., second year, 20s., third year, 22s. 6d.

Southampton University College

Professor of Chemistry: N. K. Adam, D.Sc., F.R.S. Recognised for the Preliminary Scientific examination. Details of courses and fees from the Registrar.

Stockport College for Further Education

Full-time day course for the Preliminary Scientific examination and part-time day courses for second and third year students. Principal: G. W. Wood, M.Sc.

Sunderland Technical College

Principal: E. R. Verity, B.Sc., A.R.C.Sc. Head of Pharmacy Department: Miss H. C. M. Winch, Ph.C., A.I.C. Full-time day courses recognised for Preliminary Scientific, Chemist and Druggist and Pharmaceutical Chemist Qualifying examinations and for the Pharmaceutical Society's Diploma in Biochemistry. Recognised by the University of London for B.Pharm. Fee: £20 per session for full-time course.

Swansea Municipal Technical College

Preparatory part-time and nine months' full-time courses for the Preliminary Scientific examination. Fee for full-time course, £15 15s.

Wigan and District Mining and Technical College

Principal: J. F. S. Ross, M.C., B.Sc., Ph.D. One-year course for the Preliminary Scientific examination. Fee: £10 10s. per session.

Wolverhampton and Staffordshire Technical College

Principal: W. E. Fisher, D.Sc. Chemistry, N. Regan, B.Sc. (Head of Department); R. S. Morrell, M.A., D.Sc. (Honorary Research Tutor); M. Schofield, M.A., B.Sc.; L. R. Meruagh, B.Sc.; Materia Medica and Pharmacy, F. W. Hurdman, M.P.S.; Botany and Zoology, Miss K. E. Ferguson, M.Sc.;





Physics, R. G. Sayer, B.Sc., M. Schofield, M.A., B.Sc. Fees, £12 12s. per session. 1937-38 session opens September 27.

SCOTLAND

Aberdeen, Robert Gordon's Technical Colleges

Pharmacy: James E. Bowen, B.Sc., Ph.C., A.I.C., Pharm. Day courses: Preliminary Scientific, Chemist and Druggist Qualifying, and Pharmaceutical Chemist Qualifying examinations, and Intermediate and Final examinations for the Degree of Bachelor of Pharmacy of the University of London. Fees: Each course, £21. Evening course over four years: fees, 1st stage, £1; 2nd stage, £1 5s.; 3rd stage, £1 1os.; 4th stage, £1 10s.

Dundee Technical College

Head of Pharmacy Department: D. McCall, B.Sc., Ph.D., Ph.C., F.L.S. Students prepared for all examinations of the Pharmaceutical Society and for B.Pharm. of London University. Classes begin September 20. Preparatory evening classes in botany and chemistry, on September 6. Fees: Day classes, £26 5s.; evening classes, £1 to £1 10s. per session.

Edinburgh, Heriot-Watt College (incorporating The Royal Public Dispensary School of Pharmacy)

Full-time courses for the Preliminary Scientific, Chemist and Druggist Qualifying and Pharmaceutical Chemist Qualifying examinations begin on October II. Under an agreement between the managers of the Royal Public Dispensary and the Governors of the Heriot-Watt College, the School of Pharmacy of the Royal Public Dispensary is incorporated in that of the College. Principal: J. Cameron Smail, O.B.E.

Glasgow Royal Technical College

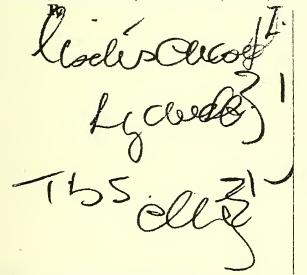
Classes for the Preliminary Scientific, Chemist and Druggist Qualifying and Pharmaceutical Chemist Qualifying examinations, for the degree of B.Sc. (Pharm.), and for the Pharmaceutical Society's Diploma in Biochemical Analysis begin on September 2. Degree course, ninety guineas, in four annual instalments of twenty-two and a half guineas; other day courses, twenty-five guineas per annum.

Paisley Technical College

Principal: Lewis F. Richardson, D.Sc. (Lond.), F.R.S. Recognised for Preliminary Scientific examination. Day and evening classes in the requisite subjects.

Prescription Problem

Exact transcriptions of the following problem are invited on postcards only (one attempt), which should reach the Editor, The Chemist and Druggist, 28 Essex Street, London, W.C.2,



not later than the first post on August 23. Prizes will be awarded at the discretion of the Editor.

Dispenserships

Official positions as dispensers or "pharmacists" are open to pharmacists as follows:

LONDON COUNTY COUNCIL (EXCLUDING MENTAL HOSPITALS).-

LONDON COUNTY COUNCIL (EXCLUDING MENTAL HOSPITALS).—

For full-time officers the annual scales of salary are as follows:—

(a) Pharmacist Scale A, £400—£20—£500; Pharmacist Scale B, £325—£12 10s.—£375; Pharmacist Scale C, £250—£10—£300.

(b) Pharmacist acting as assistant to another pharmacist, £225—£10—£275. The normal hours of duty are fortyone and a half weekly. Should the working of overtime one and a half weekly. Should the working of overtime to the sallowed proposition of the sallowed proposition of the sallowed proposition. unavoidably necessary, equal time off is to be allowed, provided that it is practicable for such time off to be taken within a reasonable period after the overtime has been worked; in no case will overtime be allowed to accumulate and the time off in lieu be added to annual leave, and periods of overtime of less than half an hour a day shall not be taken into account. Full pay for a reasonable period is made at the discretion of the Central Public Health Committee or a subcommittee thereof. Annual leave (subject to review) for pharmacists, Scales A and B is eighteen working days rising to twenty-four working days after twelve years' service in the grade, in addition to the six public holidays or days in lieu thereof.

LONDON COUNTY COUNCIL (MENTAL INSTITUTIONS).—The rates of pay for pharmacists in mental institutions controlled by the London County Council are as follows: - Large London County mental hospitals (men and women).—£270 a year, rising by £15 annually to £405. Caterham, Leavesden, St. Ebba's, and Tooting Bec hospitals and Darenth Park (men and women).— £250 a year, rising by £12 10s. annually to £350. The Manor, Epsom, and The Maudsley hospital (women).—£220 a year, rising by £10 annually to £250, thence by £12 10s. annually

to £300.

Navy.—The Pharmaceutical Service consists of the following grades:—(a) Head pharmacist; (b) superintending pharmacists; (c) senior pharmacists; (d) pharmacists. The age of pharmacists on entry must not be less than twenty-one nor more than twenty-eight years. Candidates must possess certificates that they hold either the Major or the Minor qualifica-tion of the Pharmaceutical Society of Great Britain or the certificate of competency granted by the Pharmaceutical Society of Northern Ireland or that granted by the Pharmaceutical Society of Ireland, and produce testimonials and a full record of training, qualifications and experience. Successful candidates are required to satisfy the Civil Service Commissioners as to their health and character and to pay a fee of £3 before the issue of the certificate of qualification for appointment. They are included in the list of salaried officers and will be entitled to pension. Pharmacists are paid a salary of £190 per annum, on entry, rising by £12 annually to £274. are also provided with quarters suitable for unmarried men. When such quarters cannot be provided, an allowance of £49 a year will be granted in lieu. When they are resident within the precincts of a naval hospital they will be allowed to buy certain articles of provision and fuel at contract rates. Pharmacists are eligible, subject to the existence of vacancies, and to their being recommended, for promotion to the grades of senior, superintending and head pharmacist. The scale of salary for senior pharmacists is £290—£12—£380, together with quarters or an allowance of £49 a year in lieu. Further particulars are given in the official regulations.

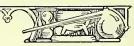
PUBLIC ASSISTANCE INSTITUTIONS.—Appointments of dispensers under the old poor-law service are now made by boroughs or county councils (other than the London County Council, for which see above). Under the Poor Law Order of 1930 such dispensers are not included in the list of principal

officers. The salaries vary.

Prison Commission.—Candidates for appointment must be between twenty-four and thirty-five years of age, and must hold the qualification of the Pharmaceutical Society of Great Britain as chemist and druggist or pharmaceutical chemist. The scale of pay begins at £200 per annum, proceeding by annual increments to £325 per annum. For further information apply to the Prison Commissioners, Home Office, London, S.W.1.

Shipping Service.—The descriptive article in The Chemist AND DRUGGIST Annual Special Issue of June 27, 1936 (p. 736), should be consulted.





reland—I. Free State

The chief enactments governing the practice of pharmacy in the Irish Free State are the Pharmacy Act (Ireland), 1875, the Pharmacy Act (Ireland), 1875, Amendment Act, 1890, and the Sale of Poisons (Ireland) Act, 1870. Particulars of these Acts, so far as the sale of poisons is concerned, and of the Dangerous Drugs Act, 1920, are given in each annual issue of *The Chemist and Druggist Diary*. The Act of 1875 set up a class of qualified persons, pharmaceutical chemists, to keep open shop for retailing, dispensing and compounding poisons and medical prescriptions. The Amending Act of 1890 brought into existence chemists and druggists and registered druggists on a statutory basis, and introduced a qualification for assistants to pharmaceutical chemists enabling them to transact the business of a shop during their employers' temporary absence. The Saorstat Eireann Juries Act, 1927, conferred on registered pharmaceutical chemists actually in business exemption from

service on juries. The Irish Pharmacy Acts, 1875 and 1890, differ from the corresponding Acts of Great Britain in that mention is made of the sub-jects in which candidates for the Licentiate and the Registered Druggist qualification are to be examined—with the addition, in the earlier Act, of "such other subjects as may from time to time be prescribed by any regulations made in pursuance of this Act." The Registrar and Clerk to the Council of the Pharmaceutical Society of Ireland is Mr. James J. Kerr, P.C., M.P.S.I., 67 Lower Mount Street, Dublin.

Preliminary Examination

This examination must be passed prior to the service in pharmacy required by the Regulations for the Licence examination, unless such service has been commenced before January 1, 1907. The Preliminary examination has been suspended for a period of ten years from January 1, 1935. The Matriculation examination of the National University of Ireland will be accepted in lieu of the Preliminary examination provided that:—(I) Å re-

gistration fee of £4 4s. shall be paid;
(2) the certificate must show that the candidate has passed in Irish, English, Latin and mathematics; (3) such certificate shall be registered with the Society within sixty days of the commencement of the apprenticeship.

Pharmaceutical Licence

The qualifying examination for pharmaceutical chemist in Ireland is that of Licentiate. The conditions to be fulfilled before entering upon the Pharmaceutical licence examinations

(a) After preliminary registration the person must serve four years as an apprentice or assistant with, and in the sole employment of, a pharmaceutical chemist, or a chemist and druggist of Great Britain, or an apothecary, or a firm of legally qualified pharmaceutical chemists, chemists and druggists of Great Britain, or apothecaries keeping open shop, and the candidate must speud the business day with his employer. (Provision is made for service with more than one employer, and, for those who have served four years with a chemist and druggist or registered druggist in Ireland, two years' further service with a pharmaceutical chemist or an apothecary suffices.) suffices.)

(b) Attend courses of lectures in theoretical chemistry and in botany and materia medica, and a course of practical chemistry (after the lectures in theory) at one or other of the following approved institutions:

School of the Pharmaceutical Society of Ireland. Central Technical Institute, Waterford. Municipal Technical School, Drogheda. Municipal Technical Institute, Limerick.

City of Dublin Technical Schools.
Queen's University, Belfast.
University College, Galway.
Royal College of Surgeons in Ireland, Dublin.
School of Physic, Trinity College, Dublin.
Crawford Municipal Technical Institute, Cork.
Control Technical Lectifity.

Crawford Municipal Technical Institute, Central Technical Institute, Clonmel. Municipal Technical Schools, Dundalk. City of Galway Technical Institute. Crawford Municipal School, Cork. University College, Dublin. Trinity College, Dublin.

Some of these are approved for all the subjects, others for one or two subjects only.

Candidates entering for the Licence examination for the first time after October 1, 1933, must have attended a course of practical pharmacy of three months' duration in the Society's Schools.

(c) The person must be twenty-one years of age.

(d) Declaration and certificates of the foregoing must be lodged with the Registrar when the candidate applies for entry to the Licence examination.

The examination commences on the Monday following the second Tuesday of January, April, July and October, at 10 a.m., and is held in the Pharmaceutical Society's House, Dublin. Candidates must give notice of intention to attend, to the Registrar, fourteen clear days before the date of examination, and this must be accompanied by a receipt of having paid the fee (£5 5s.) into the Bank of Ireland to the credit of the Society. The necessary forms should be procured well in advance. The re-examination fee is £5 5s. The examination, which is written, practical and oral, is in the following subjects:-

BOTANY: Recognition of the principal indigenous plants used in medicine, their natural orders, and the characters of their

several parts.

Materia Medica: Recognition of B.P. drugs; their characters, active principles, sources, official preparations and adulatoration. terations.

CHEMISTRY: Elementary

AL ASSISTANT
of the twenty-one, nor have of instruction.

CHEMISTRY: Elementary laws of chemistry and physics, including equations. Recognition of B.P. chemicals, description of the processes by which they are obtained, qualitative analysis (including B.P. tests) and volumetric analysis, and a practical examination in these subjects. (The Council recommends "Text Book of Pharmaceutical Chemistry" (Bentley and Driver).)

PRACTICAL PHARMACY: Translation of Latin prescriptions, detection of dangerous doses, and compounding and dispensing. Processes of making and recognition of B.P. non-chemical preparations, and an intimate knowledge of the Sale of Poisons (Ireland) Act, 1870; Arsenic Act, 1851; Poisons and Pharmacy Act, 1908; and D.D.A. Regulations. Regulations.

Candidates passing the examination must pay a fee of £10 10s. for registration.

Assistants to Pharmaceutical Chemists

This examination, instituted as a qualification for assistants left temporarily in charge of the business of a pharmaceutical chemist, is held quarterly, being on the Monday following the examination for the Pharmaceutical Licence. This permits unsuccessful candidates at the latter examination to enter for the assistants' examination on payment of a fee of £2 2s. New candidates pay, in addition, a registration fee of £1 1s. The re-examination fee is £2 2s. The conditions are similar to those of the Licence examination, but the candidate need not be twenty-one years of age, nor have taken a special course of instruction. The subjects are:—

PRESCRIPTIONS: Candidates will be required to read autograph prescriptions, translate them into English, render a correct translation of the directions for use, and detect unusual doses.

PRACTICAL DISPENSING: To weigh, measure and compound medicines, write the directions in suitable language, finish and properly direct each package.

MATERIA MEDICA AND QUALITY OF SPECIMENS: To recognise the Pharmacoppein chemicals in frequent demand, and specimens of protests.

macopæia chemicals in frequent demand, and specimens of roots,

IRISH FREE STATE PHARMACY QUALIFICATIONS

(IN BRIEF)

L.P.S.I.

- 1. Pass Recognised Preliminary before apprentice-
- 2. Four years' apprenticeship in a pharmacy.
- Courses, in an approved institution, of three

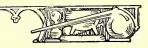
 months in (a) Theoretical Chemistry, (b) Botany
 and Materia Medica, (c) Practical Chemistry.
- 4. Pass Pharmaceutical Licence Examination after

- Serve four years as assistant or apprentice.
- 2. Pass Registered Druggist Examination.

PHARMACEUTICAL ASSISTANT

As for L.P.S.I., but need not be twenty-one, nor have taken courses of instruction.





barks, leaves, fruits, resins and gums in ordinary use; also to estimate the quality of each specimen submitted, and its freedom from adulteration.

Pharmacy: To recognise the preparations of the Pharmacopæia which are not of a definite chemical nature, such as extracts, tinctures and powders, and give the proportions of the more active ingredients.

The candidates will also be examined in the Sale of Poisons (Ireland) Act; Arsenic Act, 1851; Poisons and Pharmacy Act, 1908; and

D.D.A. regulations.

Registered Druggists

The subjects of the examination are prescribed by the Pharmacy Act (Ireland) Amendment Act, 1890, and are as follows:--

English orthography and composition.

Arithmetic and the weights and measures of the British Pharmacopœia.

The appearance and properties of the various drugs and chemicals

in general use.

The Sale of Poisons (Ireland) Act.

The examination is open to anyone who has served as an assistant or apprentice for not less than four years to a phar-

maceutical chemist, chemist anddruggist, registered druggist, or licentiate apothecary, keeping open shop, and is held in Dublin on the second Tuesday of January, April, July and October. Application for admission, accompanied by the necessary declarations of service and a receipt for £4 4s. placed to the credit of the Society in the Bank of Ireland, must be made to the Registrar at least fourteen days before the dates of the examinations. The re-examination fee is £2 2s.

II—Northern Ireland Preliminary Examination

PHARMACY in Northern Ireland differs from pharmacy in Great Britain and in the Irish Free State in that the registered proprietors of retail businesses will all, eventually, be pharmaceutical chemists, the former class of registered druggists having either become pharmaceutical chemists since 1925 or having been registered under a provision which is not being continued permanently. The Pharmacy and Poisons Act (Northern Ireland), 1925, under which this change is taking place, provided a modified examination for registered druggists who

wished to qualify as pharmaceutical chemists; and many have thus secured the higher qualification. The Queen's University of Belfast offers the degree of B.Sc. in Pharmaceutics, the examination for which exempts from examination by the Pharmaceutical Society in pharmacognosy and chemistry. Part II, and from the written examination in pharmacy. Full particulars may be obtained from the Registrar of the Uni-

versity or the Secretary of the Society.

Before a student can become apprenticed he must pass a preliminary examination in English, mathematics, and three other subjects (one of which must be a language from the following list):—Latin, Greek, French, German, Spanish, Italian, Irish, modern history, geography, botany, chemistry, physics or mechanics. The five subjects must have been passed at one, or not more than two, of the following examinations: (a) The Matriculation examination of the Queen's University of Belfast; (b) any examination accepted by that University as equivalent to Matriculation examination; (c) the Pharmaceutical Preliminary examination of Queen's University, Belfast. Candidates in the first instance must apply to the secretary of the Pharmaceutical Society of Northern Ireland, 73 University Street, Belfast, at least one month before the last day of entry for Matriculation. They will be examined on the papers set for the Queen's University Matriculation examination, and must reach the standard set for the Pharmaceutical

Preliminary, which is below Matriculation standard. An application for the Preliminary certificate of apprentice to a pharmaceutical chemist must be accompanied by £3 3s. Having obtained this, the student will register officially as an apprentice at the Ministry of Home Affairs (fee 5s.). A four-years' apprenticeship to a pharmaceutical chemist or four years with a registered druggist and two years with a pharmaceutical chemist then begins.

Pharmaceutical Chemists

Having satisfied the requirements as to apprenticeship and attendance at approved courses of instruction the candidate under the new Regulations must pass Part I, the subjects of which are botany, chemistry Part I, physics and business methods (or pass the Intermediate examination of the Queen's University, Belfast):-

BOTANY.—The elements of plant morphology and anatomy, physiology, classification. Practical examination of plants and

preparation of sections for the microscope.

CHEMISTRY, PART I.—An elementary knowledge of chemical action, laws, valency; non-metals, metals, carbon, methane, ethylene and acetylene; methods of determining hydrogen, oxygen carbon. nitrogen in organic compounds. Solve simple problems in weight and volume. Practical.—Preparation of inorganic substances; qualitative and quantitative (volumetric) analysis.

> Physics.—Elementary knowledge of mass, energy and work, solids, liquids, gases; temperature; propagation of light, magnetism and electricity. Practical.—Perform simple experiments on the above.

> Business methods. — Book-keeping, including business books required in a pharmacy; double entry; balance sheets; commercial law relating to master and servant, leases, agreements and contracts. A working knowledge of matters likely to arise ments and contracts. in pharmaceutical practice relating to licences, insurance, income tax, part-nership and company trading, elementary principles of advertising and salesmanship; modern methods of window display; shopcraft, including arrangement of a shop, windows, heat, ventilation, counters, wall and counter cases and general layout.

Having passed Part I at not more than two examinations, the candidate supplies evidence of age, twenty-one, attendance at approved courses in the subjects of Part II as follows. Alternatively, the candidate may submit to the Board of Examiners evidence that he has passed the examination in all subjects of Final Part I for the B.Sc. in pharmaceutics of the Queen's University, Belfast, and present himself for oral and practical examinations in pharmacy, practical pharmacy, Latin and prescription-reading. A candidate who fails in any of these subjects must present himself in all at another examination.

Pharmacognosy.—Recognition of B.P. drugs, their sources, characters, active principles, varieties, natural orders, knowledge of B.P. tests.

Pharmacy.—Knowledge of operations requiring heat, disintegration of solid substances, filtration, expression, solution, art of dispensing, manufacture of galenicals.

LATIN AND PRESCRIPTION-READING.—Translation of Latin prescriptions; detection of errors; knowledge of posology; percentages.

PRACTICAL PHARMACY.—Perform operations of the B.P. in making galenicals. Compound and dispense medicines.

FORENSIC PHARMACY.—Knowledge of poisons in the fourth Schedule to the Pharmacy and Poisons Act (Northern Ireland),

NORTHERN IRELAND PHARMACY QUALIFICATION

(IN BRIEF)

PHARMACEUTICAL CHEMIST

- 1. Pass recognised Preliminary Examination.
- Serve apprenticeship (a) four years under pharmaceutical chemist or (b) four years under registered druggist and two years under pharmaceutical chemist.
- 3. Attend approved courses in Part I.
- 4. Pass Part I (a) Botany, (b) Chemistry, (c) Physics, (d) Business Methods. Fee £4 4s.
- 5. Attend approved courses in Part II.
- 6. Pass Pharmaceutical Chemist Examination at age of twenty-one (a) Chemistry (2), (b) Pharmacognosy, (c) Pharmacy, (d) Practical Pharmacy, (e) Latin, (f) Prescription-Reading. Fee £8 8s.





1925, and conditions relating to keeping, selling and dispensing. Dangerous Drugs Acts and Regulations.

CHEMISTRY, PART II.—General knowledge of B.P. and common alkyl and aryl compounds, adulterations in B.P. inorganic and organic compounds and methods of determining purity. Practical: Identify specified organic compounds; detect adulterants of B.P. substances; volumetric and nitrometric determinations; methods of preparing more important inorganic and specified organic compounds; alkaloidal determinations.

The examinations are held in June and December, examination fees being £4 4s. for Part I and £8 8s. for Part II. For re-examination, half these fees.

Pharmaceutical Society's Schools

67 Lower Mount Street, Dublin.

Director: Chemistry School, Professor H. Norminton, M.Sc. Botany and Materia Medica School, Mr. A. F. Collins, B.Sc., M.P.S.I., H. Dip. Pharmacy Class, Mr. Thomas J. Smith, M.P.S.I., on Mondays, Wednesdays and Fridays from 7.30 to 9.30, and the student must attend at least 75 per cent. of the lectures to obtain a certificate. Two sessions commence on October 1 and January 1. Fees: Theoretical chemmistry (three months), £1 11s. 6d.; practical chemistry (100 hours), £8 8s.; practice course (three months), past students, £2 2s.; students of other schools, £4 4s.; botany and materia medica (three months), £2 2s.; pharmacy, £4 4s.; students of other schools, £5 5s. Botany and materia medica classes held on Tuesday and Thursday evenings. Revision courses for past students, half fees.

Belfast Municipal College of Technology

Head of Chemistry Department: Professor H. Wren, D.Sc.; Lecturers in pharmaceutical subjects, C. J. Still, Ph.D., M.Sc., C. W. Young, Ph.C., Miss Hughes, B.A., M.Sc., A.I.C., J. W. Porter, F.I.C., F.R.C.Sc.I., A. J. Thorburn, B.Sc., Ph.C. Under the co-ordination scheme with the Queen's University of Belfast students may also obtain the degree of B.Sc. in Pharmaceutics. Pharmaceutics.

Apothecaries' Assistants

Section 17 of the Apothecaries Act, 1815, enacted that an examination should be instituted for the purpose of granting certificates to persons "to act as assistant to an apothecary in compounding and dispensing medicines." The certificate granted only entitles the holder to dispense under supervision.
The examination is held four times a year; the conditions are as

(a) The candidate (male or female) must be at least eighteen years of age. (b) A certificate of general education up to the age of sixteen must be produced. (c) A certificate of instruction in chemistry for not less than 200 hours during nine months, signed by a principal teacher of chemistry at a university, college, technical institute, school of pharmacy, or a secondary school, or by a person possessing a university degree in science, or a fellowship of the Institute of Chemistry. (d) A certificate of instruction in practical pharmacy and materia medica for not less than 200 hours during nine months, signed by an assistant of the Society holding a public appointment, a registered pharmacist, or a registered medical practitioner. (e) The candidate must pass an examination in (1) compounding and dispensing medicines (a practical and oral examination), (2) chemistry, materia medica, pharmacy, and the translation of prescriptions (an oral examination). Fee £6 6s.

Particulars are obtainable from the Registrar, Society of Apothecaries of London, Water Lane, London, E.C.4.

The Apothecaries' Hall of Ireland has a similar examination for the certificate of assistant to an apothecary. The examination is held monthly, August and September excepted. Fee, £15 15s. Particulars from the Registrar (Dr. T. G. McGrath) or from the Secretary (Mr. J. F. Kennedy), 95 Merrion Square, Dublin.

Books for Students

The following list contains some of the popular text-books for pharmaceutical students:-

"Pharmaceutical Botany" (C. & D. Office), 5s.
"Practical Botany for Beginners," Bower and Gwynne-Vaughan (Macmillan), 4s.

"Text-Book of Botany for Medical and Pharmaceutical Students" and "Practical Botany," James Small (Churchill), 21s, and 10s, 6d. respectively.
"Intermediate Botany," L. J. Brimble (Macmillan), 8s. 6d.

CHEMISTRY

"Text-Book of Inorganic Chemistry," Senter (Methuen),

"Inorganic Chemistry," Lowry (Macmillan), 20s.
"A Student's Manual of Organic Chemistry," Thorpe and

Whiteley (Longmans), 9s.
"Volumetric Analysis," Hampshire (Churchill), 7s. 6d.
"Sutton's Volumetric Analysis," A. D. Mitchell (Churchill),

35s. "Organic Chemistry for Medical, Intermediate Science and Pharmaceutical Students," A. Killen Macbeth (Longmans),

FORENSIC PHARMACY

The Chemist and Druggist Poisons Guide (C. & D. Office), 3s. 6d.
"Forensic Pharmacy" (Pharmaceutical Society), 3s. 6d.

PHARMACEUTICS

"British Pharmacopœia," 1932 (Constable), 21s.
British Pharmaceutical Codex," 1934 (Pharmaceutical

Society), 35s.
"The Science and Practice of Pharmacy," R. R. Bennett

and T. T. Cocking (Churchill), 36s. (2 vol.).

"A Course in Practical Pharmacy," J. W. Cooper and F. N.

Appleyard (Pitman), 7s. 6d.

"Art of Dispensing" (C. & D. Office), 8s.

"A Handbook to Pharmacy," W. Kirkby (C. & D. Office),

5s. '' A Text-Book of Pharmaceutics,'' A. O. Bentley (Baillière), 15s.

PHARMACEUTICAL LATIN AND PRESCRIPTION-READING

"Medical and Pharmaceutical Latin for Students of Medicine and Pharmacy," R. R. Bennett (Churchill), 10s. 6d.
"Latin for Pharmaceutical Students," J. W. Cooper and

A. C. McLaren (Pitman), 6s.

PHARMACOGNOSY

"Text-Book of Pharmacognosy," Greenish (Churchill), 25s. "Practical Pharmacognosy," T. E. Wallis (Churchill), 12s. 6d.
"Materia Medica," Southall, revised by E. W. Mann

(Churchill), 12s. 6d.

Text-Book of Pharmacognosy," G. E. Trease (Baillière),

^{21s.} "Text-Book of Pharmacognosy," J. W. Cooper and T. E. Denston (Pitman), 18s.

"Manual of Physics," J. A. Crowther (Oxford University

Press), 14s.
"A Class Book of Physics," R. Gregory and H. E. Hadley

(Macmillan), 5s.

"Practical Physics for Inter-B.Sc. Students," H. M.

"Practical Physics for Inter-B.Sc. Students," H. M. Browning and L. Starbuck (Blackie), 3s.

PHYSIOLOGY

"Manual of Human Physiology," Leonard Hill (Arnold),

6s. 6d.

'' Aids to Physiology,'' H. Dryerre (Baillière), 3s. 6d.

'' Bainbridge and Menzies' Essentials of Physiology,'' H. Hartridge (Longmans), 14s.

ZOOLOGY

"Outlines of Zoology," J. A. Thomson (Oxford University Press), 21s.





Scholarships and Prizes

The Pharmaceutical Society of Great Britain offers annually three medals for competition by pharmaceutical chemists who have passed the Pharmaceutical Chemist Qualifying examination, and were members or student-associates of the Society at the time of passing. The (written) examination is in materia medica, botany and chemistry. The first prize is the Pereira silver medal and books; second, the Society's silver medal and books; and third, the Society's bronze medal and books. The Society also has in its gift the following:—

The Jacob Bell Scholarship.—A scholarship of the annual value of about £70, offered annually by the Society. The award also includes a gift of books. The scholarship is tenable for one or two years in respect of various courses of study. Details are obtainable from Mr. Hugh N. Linstead, Secretary and Registrar, 17 Bloomsbury Square, London, W.C.1.

The Burroughs Scholarship has been combined with The Redwood Scholarship and The Ransom Fellowship for affording pharmaceutical chemists or university graduates in pharmacy opportunities of working in the research laboratories of the Society. Each scholarship is tenable for two years, and each holder of a scholarship receives apparatus and £100 per annum. The annual sequence of the scholarship is as follows: Burroughs; Ransom; Redwood; Ransom. Particulars and application forms may be obtained from the Secretary of the Society.

The Devon and Cornwall Exhibition in Pharmacy, of the annual value of about £25, is tenable at the University College of the South-West, Plymouth, and is applied to the payment of tuition fees. Candidates must have been trained during a specified period in Devon or Cornwall.

Herbarium Prizes.—The Council of the Society offers annually to its student-associates a silver medal, a bronze medal and certificates of honour for an herbarium of not more than 150 British plants collected in any part of the British Isles. Further particulars from the Registrar of the Society.

The Charles James Hewlett Memorial Exhibition, of the value of about £15, is awarded annually on the recommendation of the College staff to the student-associate (other than a Bell scholar) who most distinguishes himself during attendance at the first year's course for the Pharmaceutical Chemist qualifying examination or for the B.Pharm. degree.

Leverhulme Scholarships.—A fund endowing three scholarships of the annual value of £60 each was presented to the Society by the late Lord Leverhulme in 1923. The first scholarship carries with it a gold medal and £5 worth of books, and the second a prize of books to the value of £5. Further particulars from the Registrar of the Society.

The Manchester Pharmaceutical Association Scholarship is open to student-associates of the Pharmaceutical Society who have served an apprenticeship in Lancashire, Cheshire, or the High Peak Parliamentary Division of Derbyshire. It has an annual value of $\pounds 45$.

The Petrie Trust Bursary, of the annual value of about £16, is awarded each year to a registered apprentice or student who has completed a three-years' apprenticeship in the city or county of Aberdeen. Further particulars may be obtained from Mr. H. M. Dugan, 57 Braemar Place, Aberdeen.

The Rammell Studentship, of the value of £100, is tenable for a year in the Society's Pharmacological Laboratories by a pharmacist or last-term student.

Nottingham University College Studentships.—Two studentships of the annual value of £30 each are awarded, on the recommendation of the Council, by the governing body of University College, Nottingham. Further particulars in the Society's Calendar.

Until further notice, the Jacob Bell, Manchester and Leverhulme scholarships and the Devon and Cornwall exhibition will be awarded in accordance with regulations of which the following paragraphs are an abridgement.

- I. There shall be one examination for all the scholarships, which will be conducted by an examiner or examiners appointed by the Council of the Society, and the awards made by the Council on the recommendations of such examiner or examiners.
- 2. The examination shall be held on the second Tuesday and Wednesday in June of each year in Aberdeen, Birmingham, Cardiff, Edinburgh, Exeter, Leeds, London, Manchester, Newcastle, and Nottingham, or such other centres as may be selected.
 - 3. At the time of giving notice of their intention to enter for

the examination, competitors must have complied with the conditions laid down in the Society's Calendar.

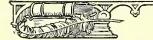
- 4. No person shall be awarded more than one scholarship, but a person may compete for all the scholarships for which he is eligible at the same examination. Should he gain marks entitling him to the award of more than one scholarship he will be permitted to select the scholarship he wishes to have awarded to him.
- 5. On the day on which the examination is held, competitors must be not more than twenty-two years of age.
- 6. Competitors must give notice to the registrar in London on or before May 15 in the year in which the examination is to take place. The notice must be accompanied by a registrar's certificate of birth, an employer's testimonial, a declaration as to practical training, and in the case of an entrant for a Nottingham studentship evidence of having matriculated at London University or being qualified for exemption. At the same time the competitor must state (a) the examination centre at which he wishes to attend and (b) in the case of the Bell and Manchester scholarships and the Nottingham studentship, the language subject in which he wishes to be examined.
- 7. The subjects of the examination (which is conducted by means of written papers) are English essay, pharmacy, chemistry, Latin (or French or German), botany, business methods. (Full particulars are printed in the Society's Calendar.)

The Pharmaceutical Society of Ireland.—The Council awards annually a gold and silver medal to pharmaceutical chemists who have during the year passed the Licence examination on the first attempt and obtained the following standard of marks: For the gold medal, not less than 240 marks out of 300, and 65 in each of the three subjects; for the silver medal, 230 marks out of 300, and 60 in each of the three subjects. Particulars may be obtained from the Registrar.

The Farchild Scholarship was founded in 1904 by Fairchild Brothers & Foster. The object of the scholarship is to encourage study during apprenticeship. The examination is designed not as a test for completed studies, but to see how far the student has used his time and powers of observation during apprenticeship so as to fit himself or herself to appreciate fully the subsequent course of study. The value is £60, and, in addition, there are prizes of £5 for the best student in England, Scotland, Wales and Ireland, apart from the scholarship. The examination takes place during June, and entries should be made on, or before, June 1. The examination is held in London, Manchester, Edinburgh, Cardiff, Dublin and Belfast, the amount over 5s. railway fare being refunded if application is made to the Secretary. The age limit is not less than nineteen years on July 1, 1938, nor exceeding the twenty-second birthday on January 1, 1939, and all competitors must be registered students or apprentices of pharmacy in their respective countries. The successful student must commence his studies within the year after winning the scholarship. The subjects are: Chemistry and physics, botany, practical pharmacy and prescription-reading, business knowledge. The trustees are Mr. Peter Boa, Edinburgh; Mr. William Kirkby, Birmingham. All communications should be addressed to the Secretary to the Trustees, Mr. Herbert Skinner, Ph.C., Albert Chambers, 65 Holborn Viaduct, London, E.C.1.

The Kinninmont Scholarship.—Instituted in 1894 by the late Alexander Kinninmont, Ph.C., for pharmacy students in Glasgow and the West of Scotland. The scholarship, of the value of £10 10s., tenable at the Royal Technical College, Glasgow, is awarded on the result of a written examination in chemistry, botany and physics, held in Glasgow in September of each year.

"Corner for Students" and "Students' Competition" Prizes.—The Chemist and Druggist conducts a monthly competition in qualitative chemical analysis. The next series of competitions, which commences in October, will give students of chemistry excellent practice in manipulation and deduction. This section of The Chemist and Druggist has for nearly seventy years afforded students a means of testing their progress in an important aspect of practical chemistry. In our Educational Number of August 20, 1921, we gave a list of first prize-winners from the institution of the Corner in 1868 to that date. The other competition was instituted last year. Further reference to these competitions is made in the present issue in an article giving historical details of the "Corner for Students," and the names of some of the best-known prize-winners.





Medicine

THE revision of the curriculum for medical studies has been under consideration since 1933, and various reports on the subject have been issued. On May 28, 1937, the General Medical Council, a body referred to more explicitly in the following paragraphs, adopted certain resolutions which are to come into force in the autumn of 1938. These resolutions will not apply, so far as pre-registration requirements are concerned, to students commencing their studies before that date: those entering their names later will find that a higher standard of general education is demanded. The final details of the changes now sanctioned will depend as much on the licensing and teaching authorities as on the Council. Though the number of medical students qualifying during recent years has exceeded the average of a generation ago or less, it does not follow that the profession is becoming overcrowded; it may be pointed out that opportunities in research, in the Army, Navy and Air Force, in Government service, hospital work and general practice have increased with the increasing public consciousness of the value of medical skill.

In this country the General Medical Council is the governing body for the purposes of examination, registration and discipline. The Council issues (price 1s.) a "Memorandum on the Procedure to be Adopted by those who Desire to Enter the Profession of Medicine. . . ." Candidates for the profession are required to possess, at the outset, a general education of the standard needed for matriculation in medicine, arts or science at a British University, together with evidence of having passed an approved pre-registration examination in elementary chemistry and elementary physics and of having commenced medical study. There are two types of medical qualification, the degrees bestowed by the universities and the diplomas given by such bodies as the Royal Colleges of Physicians and Surgeons.

Preliminary Examinations

The education committee of the General Medical Council issues a list of examining bodies, the examinations of which in general education fulfil the conditions laid down by the Council as to admission as a medical student. Any preliminary examination must include: (1) English; (2) mathematics; (3) a language other than English; (4) an additional subject or subjects as required by the regulations of the examination selected. A Joint Matriculation Board (Secretary, 315 Oxford Road, Manchester, 13) governs the Matriculation examinations of the Universities of Manchester, Liverpool, Leeds, Birmingham and Sheffield. The College of Preceptors, Bloomsbury Square, London, W.C.1, holds in March and September of every year, in Birmingham, Blackburn, Glasgow, Leeds, Liverpool, London, Manchester and Swansea, a Professional Preliminary examination for certificates recognised by the General Medical Council and other bodies. The examination may also be held at other specified centres if sufficient entries are received. The fee is 25s., plus a local fee of from 5s. to 15s. A similar examination is held (fee, 30s.) by the Educational Institute of Scotland, 46 and 47 Moray Place, Edinburgh, 3, in February, May, August and November (calendar, 6d.; examination papers, 1s.). The examination centres are Edinburgh, Glasgow, Liverpool, London and Dublin. The subjects which are compulsory and those which are optional differ to some extent in the requirements of the various universities and other qualifying bodies; consequently, the candidate must either matriculate at the university at which he or she intends to study or ascertain that the Preliminary examination certificate held is one that will be

Registration as Medical Students

The way of entrance to the medical profession is laid down in "Regulations of the General Medical Council in Regard to the Registration of Medical and Dental Students" (rs. post free from the Registrar, 44 Hallam Street, London, W.I).

The following is a summary of the necessary procedure:—

(1) Pass an approved examination in general education.

(2) Pass an examination conducted or recognised by a licensing body in chemistry, physics and elementary biology.

- (3) Having attained the age of seventeen, enter one's name at a university or at a medical school recognised by one of the licensing bodies.
 - (4) Obtain registration as a medical student.
 - (5) Study for a minimum of five years certain prescribed subjects.
- (6) Pass intermediate examinations; at the end of the fifth year pass a qualifying examination which will entitle the student to receive from a licensing body a qualification enabling him to obtain registration.

The Registrars to whom, according to the division of the United Kingdom in which the student is training, application must be made for registration are:

The Registrar of the General Medical Council, 44 Hallam Street, Portland Place, London, W.I.

The Registrar of the Scottish Branch Council, 44 Queen Street, Edinburgh, 2.

The Registrar of the Irish Branch Council, 35 Dawson Street, Dublin.

The Registration Office for the Irish Free State is Room 123, Custom House, Dublin.

A few bodies allow medical studies to be commenced at approved teaching institutions other than medical schools, and this principle is extended to graduates in arts or science at approved universities. No general exemption of this kind is given to registered pharmacists except as regards training in practical pharmacy. The Preliminary examination must have been of the standard given in the regulations, but the colleges and universities consider applications for exemption from any part of the medical examinations when such subjects as chemistry and biology have been taken at recognised institutions. Each examining body issues regulations as to the studies required, and the schools of medicine arrange their courses in conformance with such requirements.

University Degrees

In the following paragraphs we indicate concisely the condiditions framed by the universities of the places named for the ordinary degrees in medicine and surgery (M.B., Ch.B., or the equivalent degrees).

Aberdeen.—The curriculum extends over a period of not less than five years. Bursaries, scholarships and fellowships to the annual value of £1,200 are obtainable. Further information may be obtained from the Secretary to the University.

Belfast.—Three academic years at least, out of the five prescribed for the curriculum, must be passed in the University. The Dean of the Faculty of Medicine is Professor W. J Wilson, M.D.

BIRMINGHAM.—The course extends over six years, and there are five examinations. Several scholarships are available. A minimum of three years must be spent in the University Dean of the Medical Faculty, Dr. Stanley Barnes, University Medical Buildings, Edmund Street.

Bristol.—There are three examinations. The curriculum occupies five years subsequent to the passing of the Preliminary Science examination in chemistry, physics and biology. Particulars of scholarships and prizes are given in the University (Faculty of Medicine) prospectus. Secretary and Registrar, Winifred Shapland.

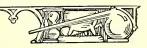
Cambridge.—Students are required to pass or obtain exemption from the Previous examination before proceeding to the examinations for the degrees of M.B., B.Chir. The Registrary is Mr. E. Harrison, M.A.

DUBLIN.—Candidates for the degrees in medicine, surgery and obstetric science must be of B.A. standing and must have completed five years in medical studies. Dean of the Faculty of Physic, Dr. J. W. Bigger.

DURHAM.—There are four examinations for the M.B., B.S. degrees, and the course of study extends over five years, three of which must be spent at the University's Medical School. Numerous bursaries and prizes are offered. Application should be made to the Dean, The Medical School, King's College, Northumberland Road, Newcastle-upon-Tyne.

EDINBURGH.—The course for the degrees of M.B. and Ch.B., which are not conferred separately, extends over not less than five years. There are four examinations. Several scholarships,





bursaries and prizes are offered for competition. Dean of the Faculty of Medicine, Professor Sydney Smith, M.D.

GLASGOW.—There are four examinations. The period of study prescribed is five years. Various bursaries and prizes are open to competition. The Dean is Prof. C. H. Browning, M.D.

IRELAND.—The National University of Ireland confers the M.B., B.Ch., and B.A.O. degrees (simultaneously) upon matriculated students who have passed the Pre-Registration examination and four further examinations. Particulars may be obtained from the Registrar, National University, Dublin.

LEEDS.—There are three examinations, and the course of study extends over five years. Dean of the Faculty of Medicine, Mr. H. Collinson, C.M.G., D.S.O., M.B., M.S.

LIVERPOOL.—The curriculum extends over six years, three of which must be passed in the University. There are three examinations. Fellowships, scholarships and prizes are available. Dean of the Faculty, Professor W. H. Wood, M.D.

London.—The normal course of study extends over five and a half years, and there are three examinations, the second of which is divided into two parts. There are several studentships and research grants available. Internal and external students should apply respectively to the Academic Registrar and the External Registrar, University of London, W.C.1.

Manchester.—Four examinations for the two degrees, after study extending over not less than five years, must be passed. Scholarships, exhibitions and other competitive prizes are offered to students. Full information is obtainable from the Dean of the Medical School (as to classes) and the Registrar (as to examinations).

Oxford.—Candidates must hold an Oxford Arts degree as a prerequisite. Two examinations are held (after a preliminary examination) for the degree of B.M.; the degree of B.Ch. is granted with that of B.M. after passing the second examination. The minimum time in which the degrees can be obtained is about six years from the commencement of "residence." The statutes are published at the Clarendon Press.

St. Andrews.—The course for the M.B., Ch.B. degrees (which are not separable) extends over at least five years, and there are four examinations. Dean of the Faculty, Professor F. J. Charteris, M.D., Medical School, Dundee.

Sheffield.—There are four examinations for the M.B., Ch.B. degrees, the curriculum occupying five and a half academic years. Several scholarships are available. Dean of the Faculty, Professor G. A. Clark, M.D.

Wales.—The course of study is divided into two parts, each extending over three academic years. A degree in science or arts of some approved university is necessary before medical degrees can be conferred. The constituent colleges are Aberystwyth, Bangor, Cardiff and Swansea. Provost, A. W. Sheen; Secretary, S. C. Edwards, The Parade, Cardiff.

Medical and Surgical Diplomas

M.R.C.S.Eng. and L.R.C.P.Lond.

The Examining Board of the Royal College of Physicians of London and the Royal College of Surgeons of England (known as "the Conjoint Board") grant a joint diploma for registration as a general medical practitioner. There are two professional examinations (in addition to the Preliminary examination and Pre-medical examination) during the five years' curriculum subsequent to registration as a medical student.

The subjects of the First Professional Examination are:—Section I, (a) Anatomy, including histology and embryology; (b) Physiology, including biochemistry. Section II, Pharmacology and materia medica. Candidates must take Parts (a) and (b) of Section I together until they have passed in one or both parts. Candidates will not be allowed to pass in one part unless they obtain at the same time at least half the number of marks required to pass in the other part. Section II may be passed at any time before the candidate enters for the Final examination. Before admission to the First examination, candidates must produce evidence of having attended specified courses of instruction.

The subjects of the Final Professional Examination are:—Section I, Pathology (including morbid anatomy, morbid histology and clinical pathology) and bacteriology. Section II, Part I, Medicine, including medical anatomy, forensic medicine and public health. Part II, Surgery, including surgical anatomy and the use of surgical appli-

ances. Part III, Midwifery and gynæcology. Candidates will be required to produce evidence of having completed specified courses of study.

Synopses of the examination can be obtained from Mr. H. H. Rew, Secretary of the Examining Board, 8-11 Queen Squate, London, W.C.1.

SCOTTISH TRIPLE QUALIFICATION

The Royal Colleges of Physicians and Surgeons of Edinburgh, with the Royal Faculty of Physicians and Surgeons of Glasgow, grant three diplomas ("Triple Qual.") jointly entitling the holder to registration as a general medical practitioner. The four examinations are held in Edinburgh and Glasgow. The course of study must occupy not less than five years. Full particulars may be obtained from the Registrar, 18 Nicolson Street, Edinburgh, or the Registrar, 242 St. Vincent Street, Glasgow.

IRISH QUALIFICATION

Particulars of the examination of the Irish Conjoint Board for the licences in medicine, surgery and midwifery may be obtained on application to the Secretary of the Committee of Management, Royal College of Surgeons, St. Stephen's Green, Dublin.

LONDON SOCIETY OF APOTHECARIES' DIPLOMA

The Society of Apothecaries of London grants a diploma (L.M.S.S.A.) in medicine, surgery and midwifery. The Final examination is held monthly, except in September, and comprises:—(a) Principles and practice of surgery, including surgical .pathology, surgical anatomy, operative manipulation, instruments and appliances. (b) Principles and practice of medicine, including therapeutics, pharmacology, pathology, bacteriology and morbid histology. (c) Midwifery, gynæcology, diseases of new-born children and the use of obstetric instruments. (d) Forensic medicine, hygiene, mental diseases, and the theory and practice of vaccination. Sections (a) (b plus d) and (c) may be taken separately. The minimum period of medical study extends over five years (fifty-seven months). The fee for the Pre-medical examination is £5 5s., and for the Licence £21, which may be paid in two instalments. Members of the Pharmaceutical Society of Great Britain are required to pass a Preliminary examination in general education in accordance with the registration requirements of the General Medical Council. They are exempted from the subject of chemistry in the Pre-medical examination, and are required to complete the full curriculum and examinations. Application may be made to the Registrar, Society of Apothecaries of London, Water Lane, E.C.4.

DUBLIN APOTHECARIES' DIPLOMA

The Apothecaries' Hall of Ireland grants a diploma (L.A.H.) to candidates who pass the requisite examinations. There are three examinations, with fees of fio ios., fio ios., and f21 respectively. Particulars may be obtained from the Registrar of the Apothecaries' Hall (Dr. T. G. McGrath), or from the Secretary (Mr. Jos. F. Kennedy).

Medical Schools

The following are the principal medical schools in the United Kingdom:—

LONDON

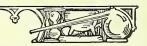
The following medical schools are constituents of the London University:—

Charing Cross Hospital Medical School, Chandos Street, W.C.2. The School contains a large and well-equipped library and a pathological museum. Scholarships and prizes to the value of about £700 are awarded every year. Dean, Mr. Eric A. Crook, M.Ch., F.R.C.S.

Guy's Hospital Medical School, London Bridge, S.E.I.—Several scholarships are obtainable by students, and a residential college (facing the hospital) is open. Communications should be addressed to the Dean of the Medical School, Professor T. B. Johnston.

King's College, Faculty of Medical Science, Strand, W.C.2.— Students are prepared for all the usual preliminary and intermediate examinations in medicine and surgery. Scholarships





and prizes exceeding £600 in value are awarded annually. Inquiries should be addressed to the Dean of the Faculty of Medicine.

King's College Hospital Medical School, Denmark Hill, S.E.5.—Scholarships of a total value of £1,530 are offered annually. Secretary, Mr. S. C. Ranner, M.A.

London Hospital Medical School, Turner Street, E.r.—Scholarships open to competition, and numerous prizes in various subjects. Dean, Professor W. Wright, D.Sc., M.B.

London (Royal Free Hospital) School of Medicine for Women, Hunter Street, W.C.I.—Dean, Miss Elizabeth Bolton, C.B.E., M.D., B.S. A list of scholarships (total annual value, £1,950) and other particulars may be obtained from the Warden and Secretary.

Middlesex Hospital, Mortimer Street, W.I.—The School, which includes the Bland-Sutton Institute of Pathology, the Courtauld Institute of Biochemistry, the Ferens Institute of Otology and the Barnato-Joel Research Laboratories, is fully equipped for teaching the entire medical curriculum. Two entrance scholarships, value £100 each, and four university scholarships, value £100 each, are awarded annually. Other scholarships and prizes to the total value of £1,000 are also awarded each year. Dean, Dr. H. E. Boldero, F.R.C.P. Secretary, Mr. R. A. Foley, F.C.C.S.

St. Bartholomew's Hospital Medical College, Smithfield, E.C.I.—The total value of the scholarships and prizes awarded annually is over £1,900. Dean, Mr. W. Girling Ball, F.R.C.S.

St. George's Hospital, Hyde Park Corner, S.W.I.—Courses in preliminary and intermediate subjects are taken at King's College or University College. There are several scholarships, exhibitions and prizes. Dean, Mr. M. F. Nicholls, M.Ch.

St. Mary's Hospital Medical School, Cambridge Place, W.2.—Entrance-scholarships, together with several studentships and prizes, are awarded annually. Dean, Dr. C. M. Wilson.

St. Thomas's Hospital Medical School, Albert Embankment, S.E.I.—Entrance scholarships and other prizes are open for competition. Secretary, Dr. R. J. C. Thompson.

University College Hospital Medical School, University Street, W.C.I.—Several scholarships and exhibitions are offered by competition. Dean, Mr. Gwynne Williams, M.S., F.R.C.S.

Westminster Hospital Medical School, 12 Caxton Street, S.W.I.—Scholarships and prizes are awarded. Preliminary and intermediate studies are taken at King's College. Dean, Dr. Adolphe Abrahams, O.B.E.

OUTSIDE LONDON

ABERDEEN.—University Faculty of Medicine.—The total cost of obtaining the M.B., Ch.B. degree is estimated at £240, including hospital fees, class fees, and degree fees. Clinical study is available at the Royal Infirmary and other local institutions. Applicants should communicate with the Secretary.

Belfast.—Queen's University of Belfast.—Students are prepared, during a five-years' course, for the degrees of M.B., B.Ch., and B.A.O. The combined class and laboratory fee for four years is £105, payable in four instalments.

BIRMINGHAM.—University Faculty of Medicine.—The minimum cost of obtaining the double degree is estimated at £246. Combined courses for medical and dental degrees or diplomas can be arranged. Full information is obtainable at the Dean's Office, Medical Buildings, Edmund Street.

Bristol.—University Faculty of Medicine.—The approximate cost of obtaining the conjoint degrees is £263, payable by six annual instalments.

Cardiff.—The Welsh National School of Medicine is a constituent school of the University of Wales. Composition-fees for six years amount to about £290. Application for particulars may be made by letter to the Provost or Secretary.

CORK.—University College is a constituent college of the National University of Ireland. The calendar (price 6d.) is obtainable from the Secretary.

Dublin.—Royal College of Surgeons' Schools of Surgery are attached to the Royal College of Surgeons. The cost of obtaining the conjoint diplomas is estimated at £185 18s. Scholar-

ships and prizes are obtainable. A syllabus may be obtained from Mr. Alfred Miller, Registrar, Royal College of Surgeons.

School of Physic, Trinity College.—The cost of qualifying after obtaining the B.A. degree, amounts to £147. Registrar, Mr. G. L. Allen, M.A.

University College.—A constituent college of the National University of Ireland.

Durham.—See "Newcastle-upon-Tyne."

Edinburgh.—University Faculty of Medicine.—The minimum cost of qualification is estimated at £262.

School of Medicine of the Royal Colleges.—The courses of study are suited to University and other qualifications. The minimum cost of education for the triple qualification, including examination fees, is about £180, payable by instalments. Scholarships and bursaries are available. Calendar, 1s. post free, on application to the Dean, Surgeons' Hall, Edinburgh.

GALWAY.—University College.—A constituent college of the National University of Ireland.

GLASGOW.—The University Faculty of Medicine.—The division of studies is similar to that adopted at Edinburgh, and the fees are about equal.

The Anderson College of Medicine, Dumbarton Road, W.—Students are prepared for University and other qualifications. St. Mungo's College, 86 Castle Street.—The total fees payable for preparation for a Scottish or English qualification amount to rather more than £100.

Leeds.—University Faculty of Medicine.—The total cost of education for the M.B., Ch.B. degrees is estimated at £367. Registrar of the University, A. E. Wheeler, M.A.

LIVERPOOL.—University Faculty of Medicine.—The composition and other fees for a six-years' course are estimated at £375.

Manchester.—University Faculty of Medicine.—The fees for the training and examination for the M.B., Ch.B. degrees are estimated at £350. Courses are also available for other degrees and diplomas. Particulars may be obtained (price 3d.) on application from the Registrar.

Newcastle-upon-Tyne.—The Medical School, King's College.—The composition-fee for a complete course of lectures and laboratory work at the College is £132 if paid in advance. For particulars apply to the Dean.

St. Andrew's.—University Faculty of Medicine.—The inclusive fee for five-years' University and clinical courses for the M.B., Ch.B. degrees is £126, payable in five annual instalments. Advisers of Studies, Professor F. J. Charteris, M.D., Dundee, and Professor D. Waterston, M.D., St. Andrews.

SHEFFIELD.—University Faculty of Medicine.—A five-and-a-half years' course is provided for. The composition-fee is estimated at £238, payable in six instalments.

Swansea.—University College.—A constituent college of the University of Wales. Registrar, Mr. Edwin Drew.

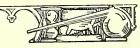
Dentistry

The number of dentists on the Register for the current year is by no means excessive, and may even be regarded as hardly adequate, for the needs of the population. There are many openings for qualified men, including posts in the Army and Navy. The Dental Board of the United Kingdom, which is the body entrusted with the duty of carrying out the requirements of the General Medical Council with regard to dentists, gives substantial grants to dental students in approved cases. The curriculum, as indicated in the following paragraphs, is in many respects similar to that of medical students.

Dental Training

The registration of dental students is subject to the following conditions:—The candidate must (1) be not less than seventeen years of age, (2) have passed a recognised Preliminary examination (see "Preliminary Examination" under





"Medicine") and a Pre-medical examination, and (3) have commenced professional study, by pupilage or otherwise. Candidates for a diploma in dental surgery should produce certificates of having been engaged during four years in professional study, and of having received two years' instruction in mechanical dentistry. No portion of practical instruction which is taken prior to the date of registration may be reckoned as a portion of the four years of professional study. It is recommended that instruction in dental mechanics be taken at a recognised dental hospital or school. If any part of such instruction is taken by the candidate as a pupil with a registered dentist, the time required to be devoted to it shall be at least twice the time required for the corresponding instruction taken at a dental school. Application for registration should be made on the appropriate form to the Registrar of the General Medical Council, 44 Hallam Street, London, W.I. No fee is charged for registration as a student.

The licence of the Royal College of Surgeons of England takes high rank among registrable qualifications.

The First Examination consists of (1) dental mechanics and dental metallurgy; (2) general anatomy and physiology; (3) special anatomy and physiology of the teeth and associated parts. The examination is held three times a year. Candidates may present themselves for the three parts of the First Examination together or separately on production of the required certificates of study.

The Second Examination consists of medicine, general pathology, and bacteriology. Candidates must be certified as having attended prescribed courses of study at a recognised institution for two terms.

The Final Examination comprises (1) general surgery (including surgical pathology); (2) dental surgery and pathology, and practical dental surgery. Candidates must have been engaged in recognised professional study for four years after passing Part I of the Premedical examination, and must have attended certain courses of instruction.

Inquiries should be addressed to the Director of Examinations, Examination Hall, Queen Square, London, W.C.r. Similar conditions apply to the qualifications of the following colleges:

ROYAL COLLEGE OF SURGEONS, EDINBURGH.—The course of study must occupy at least four years. The subjects are taken in three examinations. Information may be obtained from Mr. J. Wishart, M.A., Registrar, 46 and 47 Moray Place.

ROYAL FACULTY OF PHYSICIANS AND SURGEONS, GLASGOW. The general regulations are similar to those obtaining at Edinburgh. Particulars are obtainable from the Secretary of the Faculty, 242 St. Vincent Street, Glasgow, C.2.

ROYAL COLLEGE OF SURGEONS IN IRELAND, St. Stephen's Green, Dublin. There are three examinations. The Registrar will furnish particulars on application.

University Degrees and Diplomas

Belfast.—Five years' study is compulsory for students for the degree of B.D.S., and four years for candidates for the licence diploma. Regulations and other information may be obtained from the Secretary, Queen's University.

BIRMINGHAM.—The course for the Diploma (L.D.S.) occupies four years, and the course for the B.D.S. degree extends to six years. After October 1937, no credit will be given for work in dental mechanics done with a private practitioner.

Bristol.—The professional part of the dental curriculum occupies four calendar years (L.D.S.), or four and a half calendar years (B.D.S.), after passing a Preliminary Science examination in physics, chemistry and biology. Secretary and Registrar, Winifred Shapland.

DUBLIN.—Four and a half years must be spent in study for the degree of bachelor in dental science, and the B.A. degree is prerequisite. The arts and dental courses may be taken separately or concurrently. Details may be obtained from the Registrar of the School of Physic, Trinity College, Dublin.

DURHAM.—The University grants a licence and two degrees in dental surgery. The diploma course occupies four years, and the primary degree course five years. Particulars may be obtained on application to the Dean, The Medical School, King's College, Northumberland Road, Newcastle-upon-Tyne.

IRELAND.—The course of study for the B.D.S. degree of the National University of Ireland extends over at least four years, and there are four examinations. Constituent colleges, Dublin

Leeds.—There are three examinations, in addition to a prescribed course of study extending over five years for the degree and four years for the diploma. Registrar of the University, Mr. A. E. Wheeler, M.A.

LIVERPOOL.—There are four examinations for the degree of B.D.S. or for the licence in dental surgery (L.D.S.). Four years' study is required for the licence and five and a half years for the degree. Dean of the Medical Faculty, Professor W. H. Wood, M.D.

London.—The degree of B.D.S. is conferred after matriculation and three subsequent examinations, the second of which is taken in two parts. The curriculum extends over five is taken in two parts. years. For particulars apply to the External Registrar (if an external student; otherwise to the Academic Registrar), University of London, South Kensington, S.W.7.

Manchester.—The curriculum for the B.D.S. (four examinations) extends over five and a half years. The diploma course covers four years. Inquiries regarding examinations should be addressed to the Registrar of the University.

St. Andrews.—The University grants a diploma and a degree in dental surgery, after four and five years' study respectively. There are four examinations. There is also obtainable a diploma in public dentistry, the first of its kind. For particulars apply to Dr. Graham Campbell, Dental Hospital, Park Place, Dundee.

Sheffield.—Not less than five and a half years' study is required for the degree and four years for the diploma. There are three examinations for each. Registrar of the University, Mr. W. M. Gibbons, O.B.E., M.A.

Dental Instruction

The following are the chief schools in the United Kingdom for instruction in the science and practice of dentistry:

LONDON

Guy's Hospital Dental School, London Bridge, S.E.I.— Practical training is provided in the hospital. may be obtained from the Dean of the Dental School, Guy's Hospital, London, S.E.I.

King's College Hospital Dental School, Denmark Hill, S.E.S.—Complete instruction is given, in association with King's College, for dental degrees and diplomas. Dean, Dr. John A. Drake; Secretary of the School, Mr. S. C. Ranner,

London Hospital Dental School, Turner Street, E.I.—Full course (including dental mechanics) for L.D.S. diploma. Inquiries should be addressed to the Dean, Professor W. Wright,

Royal Dental Hospital of London School of Dental Surgery, Leicester Square, W.C.2.—Particulars of several scholarships are given in the calendar of the school. Dean, Mr. H. Stobie.

St. Mary's Hospital, Paddington, W.2.—Dean of the Medical School, Dr. C. M. Wilson; Secretary, Mr. B. E. Matthews.

University College Hospital Dental School, Great Portland Street, W.I.—Students are prepared for the L.D.S., R.C.S.Eng. and the B.D.S.London. Inquiries should be addressed to the Sub-Dean, Mr. J. L. Dudley Buxton, L.M.S.S.A., L.D.S., R.C.S.Eng.

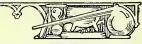
Outside London

Belfast.—Queen's University Faculty of Medicine.—The combined class and laboratory fee is £23 12s. 6d. for the first year and £26 5s. for the second year. Entrance forms and year and £26 5s. for the second year. Entrance forms and other information may be obtained by applying to the Secretary.

BIRMINGHAM.—University School of Dentistry.—The Birmingham B.D.S. course costs approximately £360, and the diploma course £310. Particulars may be obtained from the Dean of the Medical Faculty or the University Registrar.

Bristol.—University Faculty of Medicine (Dental Surgery). —The inclusive cost of the curriculum is estimated at £275 in





the case of the degree, and f_{252} for diploma students. Communications should be addressed to the Secretary and Registrar of the University.

DUBLIN.—School of Dental Science, Trinity College.—The total cost of obtaining the B.Dent.Sc. degree is given in the regulations as £335 19s. 6d., including arts and dental courses and examination and degree fees. For details apply to the Registrar of the School of Physic.

Royal College of Surgeons' Schools.—The College grants a diploma in dental surgery. Cost of tuition, £211; examination fees, £21. Registrar, Mr. Alfred Miller.

DUNDEE.—University of St. Andrew's Dental School, Park Place. Composition fees amount to about £192. Adviser of Studies, Dr. Graham Campbell.

DURHAM.—(See "Newcastle-upon-Tyne.")

Edinburgh.—School of Medicine of the Royal Colleges.—Communications should be addressed to Dr. John Orr, Dean of the School, Surgeon's Hall, Edinburgh.

Incorporated Dental Hospital and School, 31 Chambers Street.—General hospital attendance and clinical instruction are taken at the Royal Infirmary. Dean of the School, Mr. A. C. W. Hutchinson, D.D.S., M.D.S., L.D.S., F.R.S.E.; Secretary, Mr. G. M. Stuart, W.S., 56 Frederick Street.

GLASGOW.—Dental Hospital and School, 211 Renfrew Street, C.3. Estimated cost of curriculum and licence examinations, £232. Information regarding the School may be obtained from the Secretary, Royal Faculty of Physicians and Surgeons, 242 St. Vincent Street, Glasgow, C.2.

LEEDS.—Dental Department of the University.—The cost of education (including books and instruments) for the degree of the University is given in the University Calendar as £405 (£366 for the diploma). Warden of the Dental School, Professor T. Talmage Read, F.R.F.P.S., L.R.C.P., L.R.C.S., L.D.S.

LIVERPOOL.—University School of Dental Surgery—Candidates are prepared for the licence (L.D.S. Liverpool), the degree of B.D.S., and the higher degree of M.D.S. School fees for the B.D.S. (five years' training) amount to £250; those for the L.D.S. (four years' course) to £198. Director of Dental Education, Professor H. H. Stones, M.D., M.D.S., L.D.S.

Manchester.—Dental Department of the University.—Students are prepared for the B.D.S. of the University, the diploma of the University, or that of the R.C.S.Eng. and other licensing bodies. Before registration shall be considered as complete every student entering on a degree course in the Faculty of Medicine will be required to produce to the Dean of the Medical School his Matriculation certificate or certificate of exemption. In the case of a certificate of exemption, the certificate of the examination on which exemption was granted must be produced. The Professor of Dental Surgery, Dental Hospital, Oxford Road, Manchester 13, answers inquiries concerning classes. A prospectus of the Dental Department is issued by the University Press. (3d.)

Victoria University of Manchester, School of Dental Surgery, Oxford Road.—The total fees payable to the University, the Hospital, and the Infirmary for courses of study, examinations, loan of microscope, etc., and the conferment of the degree or diploma are approximately as follows:—For the B.D.S.Manch., £337; for the L.D.S.Manch. and for the L.D.S., R.C.S.Eng., £344. The total fees for women are in each case £1 118. 6d. less. The required outfit in each case (tools, instruments and booles) costs about £60 in addition. Prospectus on application to The Professor of Dental Surgery, The Dental Hospital, Oxford Road, Manchester, 13.

Newcastle-upon-Tyne.—The Medical School (Dental Department), King's College, Northumberland Road.—Composition fees (including mechanical pupilage) for the degree amount to about £236, for the diploma to about £221. For particulars apply to the Dean of the College.

St. Andrew's.—(See "Dundee.")

Sheffield.—Dental Department, University Faculty of Medicine.—Students are prepared for the degree (composition fees, £250, payable by instalments) or the diploma (composition fees, £220, payable by instalments) of the University. Registrar, Mr. W. M. Gibbons, O.B.E., M.A.

Science

RESEARCH, teaching and technical posts are the chief outlets for the experience and qualification resulting from graduating or obtaining a satisfactory diploma in pure science. Research and teaching are of importance, but are not specially well paid.

The vocation of works chemist, on the other hand, usually calls for a more practical type of skill, is more adequately remunerated, and is one for which the trained pharmacist, particularly if he has a turn for engineering, is peculiarly suited. To obtain the necessary qualification more than one method is open, but probably to the large majority of pharmacists a full-time University course leading up to a degree is out of the question. For such, an "external" degree, secured in spare time through the medium of evening classes or even of a correspondence course, will be deemed more practicable. Below are given particulars of degrees, diplomas and scholarships open to the student of science.

Science Degrees

The regulations for a degree in science of London University require the student to pass three examinations, viz.: (1) The MATRICULATION, (2) the INTERMEDIATE examination in science, and (3) the Final examination. Regulations are published for (a) internal students who register as such and follow approved courses of instruction, and (b) external students who are examined without complying with a curriculum.

For particulars of Matriculation, Special University Entrance examination and External examinations, apply to the External Registrar, University of London, South Kensington, S.W.7. Regulations for Internal students are to be obtained from the Academic Registrar. The statutes of the University require all External students to register.

The Intermediate examination in science commences on the first Monday in July. An additional Intermediate examination is held, in London, in the more usual subjects only, commencing on the fourth Monday of November. A candidate must have passed the Matriculation examination not later than the preceding January or June, respectively, or otherwise have fulfilled the conditions of exemption. Candidates are required to pass in any four subjects selected by themselves out of the following: (1) Pure mathematics; (2) applied mathematics; (3) physics; (4) chemistry; (5) geology; (6) botany; (7) zoology; (8) general principles of biology; (9) general physiology; (10) military studies; and (11) geography. At least one of the four subjects selected must be taken from among the first three. The fee is £6 6s.

The Final examination for B.Sc. takes place once a year, commencing on the third Monday prior to the first Monday in July. The B.Sc. degree is obtainable by passing the B.Sc. degree (general) examination in three subjects, or the B.Sc. degree (special) examination in one principal and one subsidiary subject. Successful candidates are awarded First-class Honours, Second-class Honours, or a Pass Degree. An additional general examination is also held in the more ordinary subjects, commencing on the first Monday in November. Candidates must have passed the Intermediate about a year previously, and the Matriculation approximately three years previously. The fee is £6 6s. There are fifteen prescribed subjects to select from. The degrees Master of Science (M.Sc.), Doctor of Philosophy (Ph.D.), and Doctor of Science (D.Sc.) are also open by examination.

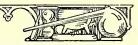
of Science (D.Sc.) are also open by examination.

The English provincial, Irish, Scottish and Welsh universities confer the B.Sc. degree (cum curriculo), usually three years after matriculation, with examinations at the end of each session.

Diplomas in Chemistry

The Institute of Chemistry of Great Britain and Ireland conducts examinations for the associateship of the Institute (A.I.C.). A certificate in Branch E (see below) is nowadays a necessity to obtain an appointment as a public analyst, and this branch frequently attracts pharmacists to become





associates. The Regulations for the admission of students, associates and fellows are obtainable from the Registrar of the Institute, 30 Russell Square, London, W.C.I.

STUDENTSHIP.—At the commencement of their training candidates should register at the Institute (see above) as students. They must be British subjects, not less than sixteen years of age, and have passed an approved preliminary examination, and at the time of application be recommended by a teacher of chemistry at a recognised institution, or by a Fellow of the Institute. Annual registration, 10s.

Associateship.—The Examination for Associateship (A.I.C.) occupies six days and consists of general theoretical chemistry (three papers) and practical chemistry. Fee, £5 5s. It is open to candidates who (i) have completed four years' systematic day course of study in prescribed subjects at an institution approved by the Council: (ii) in lieu of first year of above have taken two years' full-time study at a secondary school recognised by the Board of Education or had two years' experience in the laboratory of a Fellow of the Institute; (iii) in lieu of fourth year of above have had one year's satisfactory experience under a Fellow or in an approved laboratory or works; (iv) have obtained a degree including chemistry in the final examination, and have taken a further year's training in chemistry at a recognised institution or have had two other years' approved experience under a Fellow of the Institute or in an approved laboratory or works. In addition, applications are considered from candidates over twenty-five who have been at least eight years in practice and from candidates over thirty who have been engaged in the study and practice of chemistry for at least twelve years and attained a responsible position but who do not comply with the above requirements.

The following is a synopsis of the examination for the associateship:—

(a) General Theoretical Chemistry.—A thorough acquaintance with the fundamental laws and theories of chemistry, together with the properties and methods of preparation of the elements and their compounds, both inorganic and organic; and with application of chemistry in the arts and industries. Three papers, any of which may contain questions in inorganic, organic and physical chemistry, are set.

(b) Practical Chemistry.—Exercises in qualitative and quantitative (both gravimetric and volumetric) analysis, including the analysis of alloys, ores and minerals, and the determination of substances present in minute quantities, as impurities or otherwise, in commercial products. Preparation and purification of well-defined chemical substances. Organic analysis, including the recognition and determination of the elements and of typical groups and radicles; the identification of organic compounds; gas analysis; the determination of physical constants and the use of physical instruments employed by chemists.

Candidates are required to satisfy the examiners as to their ability to translate technical literature from French and German into English, with the aid of dictionaries.

Admission to the associateship without further examination may be granted to candidates who have obtained certain university degrees with first or second class honours in chemistry, or other diplomas recognised by the Council, subject to certain limitations as to courses of instruction and training.

Fellowship.—Admission to Fellowship of the Institute is by examination and is open to associates of three years' standing and not less than twenty-four years of age. An Associate desirous of being exempted from such examination will be required to produce satisfactory evidence that he has either (i) carried out original research of sufficient merit; or (ii) devised processes or inventions of sufficient merit; or (iii) acquired sufficient knowledge and ability, in the opinion of the Council, through having been engaged in important analytical, industrial, consulting or other work of a general or specialised character.

The Fellowship examination is more specialised, and candidates may enter for various branches. These are: (A) inorganic chemistry; (B) physical chemistry; (C) organic chemistry; (D) biochemistry; (E) the chemistry (including microscopy) of food and drugs and water; (F) agricultural chemistry; (G) industrial chemistry. Fee, £10 10s.

Scholarships.—Scholarships carrying free instruction and maintenance allowance are awarded annually as a result of science examinations held by the Board of Education. The

Salters' Institute awards grants in aid to employees (over seventeen years old) in chemical works in or near London who desire to extend their education in chemical industry. Fellowships in research are offered annually. Applications for grants and fellowships should be made early in June to the Director, Salters' Institute of Industrial Chemistry, St. Swithin's Lane, London, E.C.4.

Science Schools

At various educational centres throughout the country courses are available in scientific subjects covering, in general, the requirements for the National Certificates in Chemistry awarded by the Board of Education (see Rules No. 100, price 2d., obtainable at H.M. Stationery Office) and for the examinations of the Institute of Chemistry. For any other examinations, the student must ascertain from the secretary of the institution whether the curriculum covers the requirements.

ABERDEEN.—Robert Gordon's Technical College includes a well-equipped chemical department. Day classes, £7 per term. Evening classes, from 7s. 6d. to 20s. per session.

ABERYSTWYTH.—University College of Wales.—Three or four year courses for degree in science.

Bangor.—University College of North Wales.—Composition fees for a science student amount to £24 is. per session, including registration and apparatus fees.

Barnsley.—Technical College.—Day courses for B.Sc. of Sheffield University and in fuel and class technology.

Barrow-in-Furness.—*Technical College*.—Day and evening classes in chemistry, botany and physics; fees per session, day classes, £3 3s.

Belfast.—Queen's University.—Complete course of applied science and technology.

BIRMINGHIM.—University.—Courses in pure science. Central Technical College, Suffolk Street.—Part-time afternoon classes in chemistry, botany and physics. Aston Technical College.—Day and evening courses in chemistry and physics; sessional fees, day £1 to £4, evening 10s. 6d.

BLACKBURN.—Municipal Technical College.—Day and evening classes are available in chemistry, physics, biology and botany.

Волтон.—Municipal Technical College.—Evening courses in chemistry; fees, 5s. to 15s. per session.

BOURNEMOUTH.—Municipal College.—Courses for B.Sc. London degrees in science and engineering. Evening classes in science and technology.

Bradford.—Technical College.—Day and evening courses for University of London degree examinations.

Brighton.— $Technical\ College$.—Day courses for University of London degrees in Arts, Science, Engineering and Pharmacy: also for the A.I.C. qualification. Fee: f_{24} for the session.

Bristol.—University.—Degree courses for B.Sc. (fee, £31 10s.), M.Sc., Ph.D. and D.Sc. examinations.

Burnley.—Day and evening classes are held at the Municipal College in chemistry, physics and biology; fees, £1 is. to £2 i2s. 6d. per course (part-time).

Bury.—Evening chemistry courses (extending over three years) cost 5s. to 10s. per session.

Cambridge.—University.—For particulars apply to the Registrary. Cork.—University College.—Courses for B.Sc. degree.

Darlington.—Technical College.—Evening courses in chemistry, physics and botany, 20s. Afternoon course in practical and tutorial chemistry, 15s.

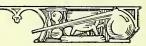
Dunder.—University College.—Day classes in botany, chemistry, physics, physiology, etc. *Technical College.*—Central institution for eastern counties of Scotland for technical instruction.

EDINBURGH.—University.—Degree courses for B.Sc. Heriot-Watt College, Chambers Street (affiliated with the University of Edinburgh).—Day courses extending over four years for the B.Sc. degree in technical chemistry, University of Edinburgh, and the B.Sc. degree in Chemistry, University of London; also for the diploma of the College in applied chemistry and the associateship of the Institute of Chemistry. Fees from £20 to £25. Evening classes in applied chemistry are also held from the end of September to March.

EXETER.—University College.—Courses for the external degrees of the University of London, and for the A.I.C., and Institute of Physics examinations.

Galway.—University College.—A constituent college of the National University of Ireland. Courses leading to the B.Sc. degree.





HALIFAX.—Municipal Technical College.—Day courses in chemistry, physics and dyeing, £15 per session; evening classes, from 14s. to 20s. per subject.

Huddersfield.—Technical College.—Full-day and evening courses in chemistry, physics, botany, zoology, and technological subjects, including manufacture of dyes. Courses for Institute of Chemistry examinations. Sessional fees: Day, £12 12s. to £21; evening from 10s., according to requirements.

HULL—Municipal Technical College, Park Street.—Day, B.Sc. (Lond.) and A.I.C. courses, £2 2s. to £10 per term; full-time day courses for pharmacists and dispensers, £2 2s. per term for Hull students. Special courses in agriculture, materia medica, oil extraction, paint and varnish manufacture.

LANCASTER.—The Storey Institute Technical College.—Evening or day classes in applied science and for matriculation; fees, 5s. 6d. to 15s. 6d. per session.

Leeds.—University.—Degree courses in science; composition-fee, £42. College of Technology.—Courses for A.I.C., College diploma and National certificates. (See also "Pharmacy.")

LIVERPOOL.—University.—Degree courses in science.

LIVERPOOL.—City Technical College.—Day and evening courses for B.Sc. and M.Sc. Degrees of London University, and the A.I.C.; special courses for F.I.C.; and post-advanced courses.

LONDON

Battersea Polytechnic, Battersea Park Road, S.W.II.—Degree courses for B.Sc. (University of London) and for A.I.C. The course for full-time day students extends over three years, and for evening students five years. Courses for F.I.C. (branch E.). Evening courses in chemical technology include food and drugs, bacteriology, oils, fats and petroleum technology and photography. Facilities are available for research work.

Birkbeck College (University of London), Breams Buildings, Fetter Lane, E.C.4.—Complete evening courses for University of London science degrees. Composition-fees for Intermediate (First year only), £5 a term, £12 a session. Final science examination (general or special), £5 15s. a term, £13 10s. a session.

45 a term, 412 a session. Final science examination (general or special), 45 15s. a term, 413 1os. a session.

Borough Polyteclinic, Borough Road, S.E.I.—Courses on food-stuffs, bacteriology, cold storage and refrigeration, oils, colours and varnishes, printing inks, synthetic resins and plastic moulding. Classes in chemistry are also held.

Chelsea Polytechnic, Manresa Road, Chelsea, S.W.3.—Day and evening courses in chemistry and botany leading to the B.Sc., M.Sc. and Ph.D. degrees of London University and the A.I.C. (Institute of Chemistry). Special courses for F.I.C. (Food and Drugs). Classes in applied chemistry, hydrogen ion measurements, dyes and drugs, photomicrography, etc. Research in physical, organic and cellulose chemistry. Fees: day, £21 per session; evening, £1 to £3 per session (three terms).

Imperial College of Science and Technology, South Kensington, S.W.7.—This college includes as integral parts the Royal College of Science, the Royal School of Mines and the City and Guilds (Engineering) College. The pre-graduate courses of study lead up to an associateship and B.Sc. degree in biology, botany, chemistry, geology, mathematics, physics and zoology at the Royal College of Science; in mining, mining geology, metallurgy and oil technology at the Royal School of Mines; and in engineering (aeronautical, civil, electrical and mechanical) at the City and Guilds (Engineering) College. Post-graduate courses and research may be undertaken by qualified candidates in all the subjects stated, and many others which are detailed in the prospectuses. The post-graduate work may lead up to the diploma of membership of the Imperial College and to the M.Sc., Ph.D., or D.Sc. of the University of London. Fellowships, scholarships and prizes are available. Fee (undergraduate students) £60 per session; (part-time students) £63. Any of the college prospectuses will be sent free on application to the Registrar, Imperial College, S.W.7.

King's College, Strand, W.C.2—Courses are available in the faculty of natural science for students preparing for B.Sc. degree and Institute of Chemistry examinations. Annual fees: Intermediate course, £36 15s.; Final course, £52 10s.

Northern Polytechnic, Holloway, N.7.—The composition-fees for the Intermediate and Final B.Sc. courses are: Day, £20 per session; evening, from 12s. 6d. to 50s. per session. Evening classes in chemistry, botany, zoology, physics and photography cost from 8s. 4d. to 50s. per session.

Oueen Mary College, Mile End Road, E.I.—Courses for intermediate and final degree examinations in science and courses of research for higher degrees. Fees, undergraduate, £28 per session; post-graduate, £22 10s. per session.

Royal Holloway College. Englefield, Surrey.—For women students only, mainly residential. The college is a school of the University of London, and the degree courses include science.

Sir John Cass Technical Institute, Jewry Street, Aldgate, E.C.3.—Day and evening courses in chemistry; physics; zoology; botany; metallurgy. Evening courses in mathematics; bacteriology; brewing; malting; biology; geology and fuel and petroleum technology. Sessional fees (September to June), evening courses, range from 8s. 6d. to 6os. Day, full time, £20 per session, £7 1os. per term; part time, £2 per session or £1 per term for each morning or afternoon per week.

University College, Gower Street, W.C.I.—Fees for B.Sc. (general or special) course for three sessions amount to £147. Facilities for post-graduate study: fee, £29 8s. for two sessions, and £22 1s. for one session. Reduced fees in the case of honours graduates who have taken their undergraduate course at the college.

Wandsworth Technical Institute, High Street, Wandsworth, S.W.18. Day and evening classes in chemistry, physics and botany. Fees: day, according to course; evening, full course, 12s. 6d. (under eighteen); 15s. (eighteen to nincteen); 20s. (nineteen to twentyone); 30s. (over twenty-one years of age).

West Ham Municipal College, Romford Road, E.15.—Day and evening classes for B.Sc. (London). Fees: day, £9 9s. to £18 18s.; evening, West Ham, East Ham, Middlesex and London students: Inter. B.Sc. course, £1 15s. Final B.Sc. course, £2 5s. Other students at double fees.

Manchesier.—Victoria University.—Courses for B.Sc. degree in science. These include ordinary, honours and general honours courses. The degrees of M.Sc., Ph.D., and D.Sc. are conferred on graduates for research.

College of Technology also provides specialised instruction in applied chemistry, leading to the Manchester University degrees of B.Sc. Tech., M.Sc. Tech., and Ph.D., and to certificates in the Faculty of Technology. Evening courses are held for the A.I.C. examination.

Tutorial College (Grime's).—University and other courses in various subjects.

Newcastle-upon-Tyne.—King's College (University of Durham). Degree course in pure science, fee: £35 per annum. Registration fee, etc., extra.

Norwich.—Technical College.—Full-time degree courses in science and engineering. Part-time courses, day and evening, in science, commerce, engineering, boot and shoe manufacture, printing, domestic science and building trade subjects.

Oxford.—University.—For particulars apply to the Registrar. Schools of Technology, Art and Commerce.—Evening classes in chemistry.

PLYMOUTH AND DEVONPORT.—Technical College.—Day and evening courses for B.Sc. London, and less advanced classes in scientific subjects. Sessional fees: Day, £18 15s. to £25; part-time day classes or evening classes, £4.

Portsmouth.—Municipal College.—Instruction in science and in technological subjects. Fees, £2 2s. to £8 8s. per term for full-time day courses; 7s. 6d. to 35s. per session for evening courses.

Preston.—Harris Institute.—Full time day course for Inter B.Sc. Evening classes for A.I.C., B.Sc. and National certificates.

Reading.—University.—B.Sc. course, £35 per session. Preliminary scientific examination of the Pharmaceutical Society, £28 per session. Evening classes in physics, chemistry and botany.

ROCHDALE.—Municipal Technical School.—Evening classes in chemistry and botany.

St. Andrews.—United College.—Inclusive fee for courses for B.Sc. degree in pure science, £94 ros.

Salford.—Royal Technical College.—Three years' full-time day course in chemistry and applied chemistry for which a diploma, endorsed by the Board of Education, is awarded. Day diploma and evening courses are recognised by the Institute of Chemistry.

Sheffield.—University.—Degree courses in science. The composition-fee for a three-year course is £105, payable in three annual instalments of £35.

SOUTHAMPION.—University College.—B.Sc. course composition-fee, £32 per session. Evening classes in science subjects, 12s. 6d. to £5 per course.

SWANSEA.—University College.—Day courses are held for degrees in science. Composition fees for a full-time degree or diploma course in pure or applied science, £20 per session.

WIGAN.—Wigan and District Mining and Technical College.—Full-time day courses in chemistry and general science for honours degree (B.Sc. of London University), A.I.C. and National certificates in chemistry. Part-time day and evening courses.





Optics

THE examinations for an optical qualification should present no difficulties to those who have already negotiated the Qualifying examination of the Pharmaceutical Society. Actually in Great Britain no qualification is required to practise as an ophthalmic optician, but it is advisable to possess documentary evidence of training and examination. Large sums of money are being spent on optical benefit under National Health Insurance, but almost without exception the optician is required to possess a diploma granted by one of the recognised examining bodies. In fact it cannot be too strongly urged that an effort should be made to pass one of the examinations of the highest standard, as the knowledge gained will be of great value in dealing with patients. If possible chemists should take the full-time course at one of the schools mentioned below, but many have successfully pursued their studies mainly by correspondence. Matriculation or equivalent standard of preliminary education is required by one examining body. Scholarships are available at the Northampton Polytechnic Institute, London, and to students about to prepare at certain centres for the examinations of the British Optical Association.

Diploma Schemes

The Worshipful Company of Spectacle Makers holds its examinations (a) Fellowship, (b) Honours, in London twice yearly and occasionally in the provinces. The former is divided into three parts; candidates over the age of seventeen years may enter for Part I, but not for Parts II and III until they have attained eighteen years. The diploma cannot be taken up before the age of twenty-one. No candidate is passed in any section of Parts II or III unless he has satisfied the examiners The Honours examination is open to those who in Part I. have passed the Fellowship examination at least twelve months previously, and is a more advanced test for those who are interested in the fundamental principles of their work. The fees are as follows:—Fellowship: Part I £4 4s., Part II £4 4s., Part III £3 3s.; Honours: £5 5s. Full particulars of the examinations may be obtained from the Clerk to the Company, 36 Furnival Street, London, E.C.4.
THE BRITISH OPTICAL ASSOCIATION, 65 Brook Street, London,

W.I, conducts a Preliminary, a Dispensing, a Fellowship, and an Honours examination, the first-named being in general education and the others in optics. No candidate will be accepted for the Fellowship examination who has not previously passed the Preliminary or an examination of matriculaously passed the Freinmany of an examination of matricular tion standard. Fellowship candidates, prior to examination, must submit evidence of at least 500 hours' training in mechanical and technical optics, roo hours' clinical training, and attendance at an approved course in clinical experience are significantly arranged with absorbance probability are perfectly arranged with absorbance probability are perfectly at the second of t specifically arranged with abnormal or pathological subjects at a recognised institution, and prior to certification of twelve months' employment or business training with an approved optical firm or optician. The examination fees are:—Preliminary, £2 12s. 6d.; Dispensing, £2 2s.; Fellowship, £10 10s.; Honours, £5 5s. The Preliminary examination is held annually and the Fellowship and Honours examinations are held twice yearly. The full prospectus, together with a list of the proposed institutions was be obtained from the secretary. approved institutions, may be obtained from the secretary.

THE NATIONAL ASSOCIATION OF OPTICIANS has instituted a

Fellowship Diploma scheme, examinations for which are held two or three times a year, usually at Birmingham, Liverpool and Glasgow. Candidates must present certificates of approved preliminary education. They must also provide evidence of practical experience in optical work and of attendance at an practical experience in optical work and or attenuance at an approved course of study. Pharmacists, subject to certain conditions, are at present exempt from the First examination. The fees are £3 3s. for the First and £5 5s. for the Final. The examination syllabus and entrance forms may be obtained from the Secretary, N.A.O., 130 Princes Road, Liverpool, 8.

THE SCOTISH ASSOCIATION OF OPTICIANS holds its examination of principles of programme control in Scotland. The syllabus is obtainable

tion at various centres in Scotland. The syllabus is obtainable from the secretary, 1014 Argyle Street, Glasgow.

Optical Instruction

The following are among the principal schools where the necessary instruction in preparation for the examinations may be obtained:-

NORTHAMPTON POLYTECHNIC INSTITUTE, St. John Street, London, E.C.I.—The courses provided by the Department of Applied Optics are organised in two divisions, namely (1) for ophthalmic and dispensing opticians and (2) for optical engineers, optical instrument makers, glass workers and spectacle makers. In the ophthalmic section complete theoretical, practical, clinical and workshop training is provided, by means of day courses and evening courses, in well equipped laboratories, workshops and clinics. The courses (full- and part-time) cover the requirements for the Fellowship and Honours examinations of the S.M.C. and B.O.A. Scholarships tenable at the two-years' full-time day courses are offered by the Worshipful Company of Spectacle Makers, The Aitchison Memorial Fund and the Governing Body of the Polytechnic; the British Optical Association offers scholarships tenable in the day or evening courses. The prospectus and full particulars will be sent on application to the secretary.

THE SCHOOL OF OPTICS, LTD., 2 Guilford Place, London, W.C.I, prepares students for all of the recognised qualifying examinations. It is well fitted up and thorough training is given. The complete full-time course of from six to twelve months' duration, according to the individual requirements of the student (fee £31 ros.), which commences in May and November of each year, covers the entire syllabus of all the recognised examinations. The part-time combined course (fee £14 14s.), which can be commenced at any time, consists of homework by correspondence, supplemented by classes held during the month preceding the examination, and on Wednesday and Thursday afternoon of every week. The School is fully recognised by the British Optical Association for mechanical, technical and clinical training, and clinical experience.

BRITISH OPTICAL INSTITUTE, LTD., Fern Lodge, 20A Grove Road, Brixton, London, S.W.9.—Full-time, part-time and correspondence courses are provided. Full courses cover the entire syllabus of each optical examination. Afternoon classes and clinic, at which both normal and abnormal cases are dealt with, are held all the year round on two days a week in order to enable students to carry out all branches of practical work. Evening classes are held during the three months and daily revision classes during the month preceding each London examination of the B.O.A. and S.M.C. There has also been arranged a correspondence course which is recognised as part of the 600 hours' mechanical and technical training required by the regulations of the British Optical Association. The Institute is a recognised training centre for all sections of the Fellowship examinations in connexion with the regulations of the B.O.A.

REFRACTION HOSPITALS.—The lectures and demonstrations arranged in connexion with the granting of the hospital certificate commence in October. The subjects include physiology, pathology, embryology, methods of examination, use of drugs and hospital routine. Post-graduate students in ophthalmic optics may attend the hospital without taking the examination. The three hospitals have been recognised by the British Optical Association for clinical experience. The London and Glasgow Hospitals now give complete optical training for the S.M.C. and B.O.A. examinations. Full particulars can be obtained from 58-60 Newington Causeway, London, S.E., or 51 St. Paul's Street, Leeds, or 26-28 Richmond Street, Glasgow, C.I.

Mr. C. A. Scurr, F.S.M.C., F.B.O.A., chemist and druggist, 50 High Street, Barnet, prepares candidates for either of the foregoing examinations. The courses, being mainly correspondence, are particularly suitable for those desiring an optical qualification by spare-time study. The practical work is usually performed during a visit to London, when the practical and revision classes are held, just prior to the examination. The fees vary from £5 5s. to £9 9s., according to the examination.

CENTRAL TECHNICAL COLLEGE, Suffolk Street, Birmingham, has three-year part-time courses, which meet the requirements of the British Optical Association and the Spectacle Makers' Company.

CARDIFF TECHNICAL COLLEGE is providing a course of training for students who intend to become ophthalmic or dispens-





ing opticians. The full course extends over two years, covering the ground required for the Honours and Fellowship examinations of the British Optical Association and other examinations of a similar character such as those of the Worshipful Company of Spectacle Makers.

LIVERPOOL CITY TECHNICAL COLLEGE holds courses in applied optics, general optics and physiology of vision, which meet the requirements of the Spectacle Makers' Company.

Municipal College of Technology, Manchester, provides a

full-time day course in applied optics extending over a period of two years. Candidates are required to pass an entrance examination (unless they have passed an approved equivalent examination), on which also a British Optical Association scholarship of the value of £40 per annum is awarded. The College also conducts evening classes which cover the examination syllabuses of, and which are recognised by, the British Optical Association.

NORTH STAFFORDSHIRE TECHNICAL COLLEGE, Stoke-on-Trent, is a recognised institution under the British Optical Association's regulations for mechanical, technical and clinical

training.

RUTHERFORD TECHNICAL COLLEGE, Newcastle-upon-Tyne, conducts courses of lectures and laboratory work designed to meet the requirements of students preparing for the B.O.A., S.M.C. and similar examinations. The full training extends over three years (three evenings per week) and the fees range from 30s. to 35s.

WEST HAM MUNICIPAL COLLEGE, Romford Road, Stratford, London, E.15, holds classes in pure and applied optics, suitable for ophthalmic, dispensing and instrument opticians, and cover the syllabuses of the optical examinations. The College is recognised by the British Optical Association for mechanical and technical training. Apply for prospectus and other particulars to the Principal.

SWANSEA MUNICIPAL TECHNICAL COLLEGE is providing a parttime course in optics, particulars of which will be sent on

The Institute of Chemists-Opticians, 285 Brompton Road, London, S.W.3, conducts a postal and practical course in optics, the fee being f6 6s. The Institute also conducts an examination for which the fee (if the five sections are taken at one time) is f4 4s. The prospectus may be obtained on application from the secretary, Mr. J. J. Laws, at the above

The College of Optics, 70 Bothwell Street, Glasgow, conducts full-time, part-time and postal courses. The Principal is

Mr. T. S. Baird, F.S.M.C., F.R.M.S.

GLASGOW SCHOOL OF OPTICS, 300 West Princes Street, Glasgow, C.4, provides part-time and postal tuition suitable for the examination of the leading optical examining bodies. Details may be obtained from the Principal, Mr. M. H. Stone.

HERIOT-WATT COLLEGE, Edinburgh, provides a full-time day course in ophthalmic optics extending over two sessions in preparation for the examinations of the Spectacle Makers' Company and the British Optical Association. This course has been recognised by the latter body for mechanical, technical and clinical training.

Veterinary Surgery

For many years prior to 1934 there was a steady diminution in the numbers of the veterinary profession. During the past three years the increase in the number of students in training has been such that the veterinary schools are now crowded. The work of the practitioner has changed in character during the past decade, for while the horse is less important, other farm animals are more valuable, and pets are receiving more attention. To practise as a veterinary surgeon it is necessary to possess the membership diploma of the Royal College of Veterinary Surgeons (10 Red Lion Square, London, W.C.1). This College is an examining body, so that professional education must be obtained at one of the affiliated veterinary colleges. Examinations are held simultaneously in London, Liverpool, Edinburgh, Glasgow and Dublin in July and December each year. The examination fee payable to the Royal College of Veterinary Surgeons is £6 6s. for each examination. Candidates

referred in one subject pay a fee of £4 4s. for each re-examination. A student who desires to become a veterinary surgeon must attend college for at least five sessions of thirty weeks each, and pass five professional examinations. Prior to admission as a student he must pass an examination in general education entitling him to admission to a university.

Veterinary Colleges

LONDON.—Royal Veterinary College and Hospital (founded 1791; incorporated 1875), Great College Street, Camden Town, N.W.1.—Educational fee for five years' course of instruction, 40 per annum, Students' Union fees amounting to £2 2s., and for those taking the B.Sc. degree in veterinary science of the University of London additional fees totalling £21. The prospectus may be obtained on application to the secretary.

Edinburgh.—Royal (Dick) Veterinary College, Summerhall (founded 1823).—Class fees for complete curriculum amount to approximately £135. There is also a matriculation fee of 10s. 6d. and an athletic fee of 10s. payable by all students at the beginning of each session. Principal, O. Charnock Bradley,

M.D., D.Sc., F.R.C.V.S.

GLASGOW.—Glasgow Veterinary College (established 1862; incorporated 1909), Buccleuch Street, Garnethill.—Full particulars are obtainable from the secretary. Principal, Professor

A. W. Whitehouse, M.A., M.R.C.V.S.

DUBLIN.—Veterinary College of Ireland, Shelbourne Road, Ballsbridge.—The College is conducted by the Department of Agriculture. The tuition fees amount to £25 for each session. Principal, Professor J. J. O'Connor, M.R.C.V.S. Particulars may be obtained from the Registrar.

LIVERPOOL.—The University Veterinary School gives a university training for the M.R.C.V.S. and also for a veterinary For the fees and complete curriculum application

should be made to the Director.

A member of the Royal College who has been engaged in the practice of his profession for two years or upwards may present himself for examination for the diploma of Fellowship (F.R.C.V.S.). Veterinary science degrees are granted by several universities, including Edinburgh, Liverpool and London.

Chiropody

Chiropody is practised as an auxiliary department by many Various training institutions exist, each conferring its own status, there being no statutory or standard qualifica-

Under the auspices of the Incorporated Society of CHIROPODISTS, 21 Cavendish Square, London, W.I, which acts as an examining body, two-year courses are organised at the Edinburgh School of Chiropody, Glasgow and West of Scotland College of Chiropody, London Foot Hospital School of Chiropody (33 Fitzroy Square, W.1), and Man-chester School of Chiropody. Students successful in the CHESTER SCHOOL OF CHIROPODY. Students successful in the examinations are eligible for membership of the Society (M.I.S.Ch.).

THE CHELSEA SCHOOL OF CHIROPODY (Chelsea Polytechnic). The school provides day courses of two years' duration for young students and of one year's duration for students over An evening course of study extends over five terms. Successful students are given a certificate and are entitled to become members of the Chelsea Chiropodists' Association. The Chelsea School is the only one under public authority.

NATIONAL SCHOOL OF CHIROPODY, associated with the Islington Free Foot Hospital, 133 Upper Street, Islington, London, N.I. A six-months' full-time course terminates with a graduating examination which qualifies the graduate to become a member of the National Institute of Chiropody and to use the letters M.N.I.Ch. on payment of the yearly subscription of

NATIONAL SCHOOL OF CHIROPODY, Manchester, is associated with the National School, Islington, to the courses and diplomas of which its own correspond.

SCHOOL OF SURGICAL CHIROPODY, 5 Smae Institute, Leatherhead, offers home courses leading to qualification for school certificate (M.S.S.Ch.).

The Student and the Trade Report

RIMARILY the C. & D. Trade Report is for the information of those who buy in bulk quantities, those who are interested being, therefore, wholesalers and manufacturers. Retailers, too, profitably study the market report for price changes, although they must not expect to buy in small quantities at the prices of the original packages quoted. The question at this point arises: what can the student learn from the C. & D. Trade Report? The Trade Report is no mere price list or catalogue of changes, but it reflects to the careful observer the results to be expected (1) when the four dreaded horsemen are abroad; (2) after the effects of earthquakes and volcanic eruptions; (3) increased demand for some new purpose. Further, the results of the introduction of new laws on prices can be seen in the rising costs of "dangerous" drugs and the decline in prices of certain drugs which can no longer

be sold without restriction.

The effects of war have been seen in the scarcity of ephedra from both China and Spain reported a week or two ago in The CHEMIST AND DRUGGIST (p. 123), and were of sufficient importance to warrant comment. In passing, it should be noted that editorial comments upon changes in prices of drugs should be read in conjunction with the market report. The effect of natural calamities in certain countries is immediately to send prices up and to cause holders of stocks in this country to refrain from selling. This was amply exemplified after the great Japanese earthquake of 1923, when menthol and peppermint oil rose enormously. The volcanic upheaval of 1908 in Sicily caused a famine in Sicilian oils, which, of course, include lemon. The recent sharp advances in the price of glycerin are likely to be due to the rearmament programme of the country, glycerin being an essential chemical. It may be recorded that at one time glycerin was a most and the country being an essential chemical. time glycerin was a waste product of soap; while one could hardly say that in these days soap is a by-product of glycerin, yet there is an element of truth in this, especially when the country needs glycerin. New crops in distant lands may affect the agricultural output of drugs or essential oils to a degree alarming for those engaged in the production of raw materials which has been the industry of the districts concerned for generations. An example of this is seen in lemon oil, which at one time was obtainable only from Italy. A number of years ago California entered the market as a competitor and has undoubtedly established itself on the lemon oil market. Here again, however, one of the effects of sanctions was to stop the export of Italian oil to this country and increase the price of the Californian product. With regard to orange oil, a new source has caused a similar *impasse*, Sicilian orange oil to-day being in small demand, whereas the French Guinea orange oil has dominated the market.

The student who wishes to understand the drug market, therefore, can find similar points of interest at which he may commence his studies of markets. In reading his daily paper, he is advised to consider the effect which important events may have in the price of the drugs with which he ought to be so familiar. The question may arise: what constitutes quality in a drug? In a trade such as pharmacy there are so many qualities of products that there is bound to be much argument, as every chemist knows to his cost. A pharmacist should know something of the quality of the drugs he is handling in order that he may be able to convince his customer that quality varies in drugs just as it does in other commodities. Consider, for example, the wide range of prices quoted for senna leaves and pods. There are two varieties: Tinnevelly and Alexandrian; the latter, especially if hand-picked, is much more expensive in all grades than Tinnevelly senna. An examination of the highest-priced Alexandrian and the ordinary commercial Tinnevelly is sufficient to explain to even the most casual observer why such differences in price exist. In the Trade Report indication is given as to how drugs are packed at the source; for example, certain varieties of aloes are packed in monkey skins, civet is imported in original bullocks' horns and earthenware pots are used for the conveyance of Indian oils. Original packages are usually preferred by importers and manufacturers.

Prices of chemicals are not subjected to the same fluctuations as are crude drugs and essential oils; nevertheless, prices do fluctuate. Possibility of wars in the future has a very serious effect on many chemicals. Outstanding amongst these is phenol, which is the starting point of many medicinal prepara-

tions as well as of explosives. In war time explosives come first, obviously; and before prices of raw material become controlled, there is usually considerable excitement in nearly every organic product. We have already referred briefly to the effect of legislation on prices of chemicals. New discoveries in which chemicals are increasingly used and the introduction of new industries can seriously affect, for a time at any rate, cost of material. So far as chemicals are concerned, however, since output can be increased, unsettled markets in this section are less likely to continue so long as they do in, for instance, natural raw materials. The rates of exchange have also a serious effect on price quotations, and in some countries quotations are made in more or less stable currency, the pound sterling being at the present time perhaps the most stable currency in the world, a fact which points to the sound condition of this country compared with those overseas, especially on the Continent of Europe.

This article cannot, in any sense of the word, cover the whole field which a serious study of the Trade Report in The Chemist and Druggist affords. The young pharmacist who takes an interest in the bigger sections of the trade is bound in later years to have a wider knowledge of what pharmacy really is; and his outlook on the trade will be improved, because his mind is not bounded by the four walls of the pharmacy in which he is situated at present. It is a commonplace to say that to buy well is to sell well; and if in buying well one has an expert knowledge of the nature of the goods in

which he is dealing, then selling becomes easier. Further, his prestige grows, and opportunities for development will appear

with greater frequency than if he were content merely to be a seller of packed commodities.

Two C.& D. Competitions

N January we reach the seventieth anniversary of one of the most familiar sections of The Chemist and Druggist. It was in January 1868 that John Cargill Brough, at that time the Editor, introduced the "Corner for Students" (after a preliminary announcement a month earlier) with an exercise on the weights of several British Pharmacopæia acids. The award of prizes began in the following June, when the student with the highest number of marks was Mr. W. M. McNaughton, of Belfast. Mr. Brough handed over the supervision of the competitions to Mr. Richard J. Moss in November 1869; and in March 1901 Dr. Leonard Dobbin, then of Edinburgh, took over the work, which he still carries on.

Last November we announced that Professor Henry Dryerre, Ph.D., M.R.C.S., L.R.C.P., who is also a pharmacist, had undertaken to conduct a competition of another kind, with particular reference to organic preparations, pharmaceutical and therapeutic incompatibilities, and the interpretation of graphs recording the experimental administration of drugs. This competition has hardly got under way yet, but we are convinced that, breaking fresh ground as it does, it will be found not less stimulating and fruitful than the "Corner." By a coincidence, all the three distinguished men who are or have been in charge of these trials of skill are former prize-winners in the "Corner"—Mr. Moss in 1868 and 1869, Dr. Dobbin in 1878, and Professor Dryerre in our Analytical Tournament

in 1907.

We need not repeat on this occasion the details of the conditions for competitors given at the opening of each winter series of tests. We may, however, by way of added inducement to students, recall the names of some of the best-known prize-winners, a complete list of whom, printed in tabular form with a line for each, would fill more than four columns of the C. & D. Taking these in alphabetical order, we may mention F. H. Alcock (1879, 1880, 81). R. R. Bennett (1898), W. C. Birks (1880), H. Brindle (1910), R. A. Cripps (1883), F. J. Dyer (1916), F. W. Fletcher (1871), J. J. G. Hay (1906), H. M. Hirst (1916), D. Hooper (1880), L. Ough (1887), R. H. Parker (1877, 79), W. A. Shenstone (1872), J. C. Thresh (1873), G. A. Tocher (1905), J. G. Wallbridge (1887), R. Wright (1882). All of these have made their mark in some sphere of life; and their names may be regarded as a hint of possibilities for students of the present day.

Trade Report

Where possible scales of prices of chemicals are given for bulk down to small quantities. Prices recorded for crude drugs, essential and fixed oils and coal tar products are for fair sized wholesale quantities. Qualities of chemicals, drugs, essential and fixed oils, etc., vary, and selected brands or grades would be at higher values

28 Essex Street, W.C.2, August 12

The week has been dull in Pharmaceutical Chemicals. The slackness generally experienced at holiday times seems to be becoming more marked each year, and is particularly noticeable at the present time. The one outstanding feature of the market is the marked scarcity of ephedrine, both on spot and on the Continent. The price mentioned in the report must be taken as to some extent hypothetical, as sellers feel that the price will go higher yet and that they have nothing to lose by holding on. An advance of 50 per cent, in the scale of prices for tablets, suggested as the basis of agreement, is already out of date, and further discussions must take place before an agreed scale is announced.

Crude Drugs

Business in this market, though quiet, has been more active than in the CHEMICALS OF CRUDE DRUGS markets. Purchases have been of a routine character, and Continental buying has been at a standstill, but piquancy has been lent by the Far Eastern situation. So long as Sino-Japanese friction was localised in the Tientsin area, ephedra was the only commodity seriously affected, but now that trouble is spreading to Shanghai numerous other products are likely to be affected, including such important items as cantharides and rhubarb. Among other commodities Ergot is problematical and Gum Acacia is anomalous. Ergot continues firm on lematical and Gum Acacia is anomalous. Ergot continues firm on spot, but Portuguese senders show no anxiety to execute orders. The appearance of some Polish ergot is recorded. Gum Acacia is easy afloat, and only a little firmer on spot, but shipment prices from the port of source are at a sharp advance, owing to reports of scarcity of collection. Japanese stocks of Agar are reported exhausted and prices are firmer in consequence. Canada Balsam is advanced on the spot owing to higher replacement costs due to scarcity at the source. Telicherry and Aleppy Pepper are firmer for sward. Pumping is also dearer and more active. Turnment for shipscarcity at the source. Telichery and Aleppy Pepper are firmer forward. Pimenro is also dearer and more active. Turmeric for shipment is another firmer commodity. Lobelia, Colocynih, Senega and the lower grades of Tragacanth are easy markets offering good opportunities for buyers. Irish Moss, West African Ginger and Menthol (for shipment) are also easier.

Essential Oils

With so many buyers apparently on holiday, brokers and merchants are experiencing little activity in the markets. However, it may be that any less fortunate buyers who are still at their posts may be attracted by the cheaper prices for Sicilian Lemon and Palmarosa. Geranium (Bourbon) is also offered at lower prices from the source than were generally expected. On the other hand, a number of oils are firmer, including Ctirronella, both Java and Ccylon, shipment; Clove (Madagascar) and Peppermint (American). A reflection of the depreciated value of the franc as compared with the pound is seen in the fact that the most recent quotations from the source for Madagascar clove oil have been in sterling instead of in francs as formerly. In the continued absence of authentic shipment offers of Bergamot, spot prices are tending firmer. offers of Bergamot, spot prices are tending firmer.

Exchange Rates on London

THE following is a list of the chief Continental and other exchange rates at the opening on Thursday morning:-

Centre	Quoted	Par	August 5	August 12
Amsterdam Berlin Brussels Copenhagen Lisbon Madrid Milan Montreal New York Oslo Paris Prague Stockholm Warsaw Zurich	Fis. to £ Mks. to £ Belgas to £ Kr. to £ Esc. to £ Ptas. to £ Lire to £ Dol. to £ Dol. to £ Kr. to £ Fr. to £	12·107 20·43 nominal 18·159 110 25·22½ 92·46 4·86¾ nominal 18·159 124·21 164·25 18·150 43·38 25·2115	9.03 12.38 29.60 22.40 110.6 nominal 948 4.985 4.985 19.90 1328 1425 19.40 268 21.69	9.04 12.38 29.61 22.40 110.16 nominal 94\$ 4.98\$ 19.90 132\$ 14.24 19.40 26\$ 21.71

Bank rate 2 per cent.

Pharmaceutical Chemicals, etc.

THE week has been featureless apart from a further sharp advance in ephedrine prices, comment on which is made in our report.

Ammonium ichthiosulphonate.—Prices quoted are unaltered at the former levels: one cwt., 1s. $6\frac{1}{2}$ d. in 14-lb. tins, 1s. 8d. in 1-lb. tins, 1s. 10\frac{1}{2}d. in 8-oz. tins, and 2s. 1d. per lb., in 4-oz. tins.

Barbitone.—Little interest has been shown in this commodity. The Convention prices are: spot, two cwt., 8s. 94d.; 56 lb., 8s. 112d.; small parcels, up to 9s. 24d. per lb.

BISMUTH SALTS.—Steady business is being done and makers' scales of prices are fully maintained: carbonate, B.P., not less than one cwt., 6s. 6d.; 28 lb., 6s. 9d.; 8 lb., 7s. 3d.; 4 lb., 8s.; less than 4 lb., 8s. 6d. per lb.

CALCIUM LACTATE.—Again quiet and values unaltered: spot, one cwt., is. 0\frac{3}{4}d.; 56 lb., is. 1\frac{1}{2}d.; 28 lb., is. 2d.; smaller quantities, up to is. 6d. per lb.

CITRIC ACID (B.P. CRYSTALS).—Market steady and prices unchanged: British quoted at is. per lb., less 5 per cent. discount, nominal and without engagement. Dealers' prices for imported material competitive.

Cream of tartar.—Steady and unchanged: British, 99 to 100 per cent., 92s. per cwt., less $2\frac{1}{2}$ per cent. discount. Dealers' prices for foreign material competitive.

Creosote (B.P.).—Dealers' quotations: for bulk quantities, in 25-kilo demijohns, 1s. 6d.; small parcels, 1s. $7\frac{1}{2}$ d. to 1s. $10\frac{1}{2}$ d. per lb.,

EPHEDRINE.—The scarcity on spot is now acute, and there are no Continental supplies forthcoming. Buyers of hydrochloride are not lacking at 8s. per lb., but sellers are not at all anxious to close, and are holding on. Revised scales for tablets are under consideration, but agreement has yet to be reached: the advance of 50 per cent. suggested is likely to be regarded as insufficient in present circumstances. Alkaloid is at about 1s. 6d. per lb. above hydrochloride

HENAMINE.—Makers' prices for bulk quantities are steady: B.P. powder at about is. 2½d.; free-running crystals, from is. 3d. to is. 6d. per lb., carriage paid, for bulk lots. Dealers quoting freerunning crystals, one cwt., 18. 4d.; 14 lb., 18. 8d.; smaller parcels, up to 28. per lb., carriage paid.

IODIDES.—A new scale of prices for iodides, iodine, and iodoform TODIDES.—A new scale of prices for iodides, iodine, and iodoform came into operation on August 9, as follows: Potassium, B.P.—I cwt., 48. 6d.; 28 lb., 48. 9d.; 14 lb., 5s.; 7 lb., 5s. 6d.; 4 lb., 6s.; smaller quantities, 6s. 6d. per lb. Sodium, B.P., 28 lb., 5s. 9d; 15 lb., 6s. rd.; 7 lb., 6s. 7d.; 4 lb., 7s. 3d.; smaller quantities, 8s. rd. per lb. Iodine, B.P., resublimed.—I cwt., 5s. 4d.; 28 lb., 5s. 7d.; 14 lb., 5s. 10d.; 7 lb., 6s. 4d.; 4 lb., 7s.; smaller quantities, 7s. 9d. per lb. Iodoform, B.P., cryst., precip. or powder.—28 lb., 8s.; 14 lb., 8s. 4d.; 7 lb., 9s.; 4 lb., 9s. 10d.; smaller quantities, 10s. 8d. per lb. Contracts for one cwt. and upwards (assorted if required with fall clause with delivery as required during four months. 28-lb. with fall clause, with delivery as required during four months. 28-lb. tins and one-cwt. cases free. All jars and bottles charged, but credited if returned carriage paid, in good condition, within three months. Assorted quantities are charged at the collective total prices. It is a condition of sale that buyers undertake not to result any quantity of the above products at prices or terms below the any quantity of the above products at prices or terms below the scale for any such quantity current at the time the resale is made.

Mercurials.—Steady business continues to be done and the prices remain firm: Chloride, B.P. (Calomel), one cwt., 5s. 11d.; less than one cwt., from 6s. per lb., upwards, as to quantity.

METHYL SALICYLATE.—Quoted at: spot, ten cwt., Is. 1\frac{1}{2}d.; five cwt., Is. 2\frac{1}{2}d.; ess than one cwt., Is. 2\frac{1}{2}d.; small quantities, in bottles, up to 2s. per lb.

METHYL SULPHONAL.—The market is quiet and prices are at the agreed Convention rates, as follows:—two cwt., 19s. 4d.; one cwt., 19s. 9d.; 56 lb., 2os. 3d.; small lots, 2os. 8d. per lb.

Para-aminobenzenesulphonamide.—Quoted by home makers at 25s. per lb., net, with slightly lower prices for quantities of seven, fourteen or twenty-eight pounds.

Pepsin.—Obtainable ex store at 10s. per lb., net, for 50-lb. lots or less, standard 1/2,500.

Phenol.—Quoted at $7\frac{3}{4}$ d. to $8\frac{1}{2}$ d. per lb.

PHENOLPHTHALEIN.—The market continues steady and prices are quoted unchanged: two cwt., 2s. 9d.; one cwt., 2s. 1od.; 28 lb., 3s.; 14 lb., 3s. 1d.; 7 lb., 3s. 2d.; smaller parcels up to 3s. 6d. per lb.

POTASSIUM PERMANGANATE (B.P.).—The demand continues moderate, with prices steady: spot, bulk quantities, in drums, 9d. to 10d. per lb.; druggists' parcels, from 10d. to 1s. per lb., as to quantity.

RESORCIN.—The prices quoted for British material are as follows: crystals, one cwt., 4s. 11d.; 56 lb., 5s.; 28 lb., 5s. 1d.; 14 lb., 5s. 3d.; 7 lb., 5s. 6d.; less than 7 lb., up to 6s. 6d. per lb.

ROCHELLE SALTS.—Prices are maintained at the makers' scales tabulated below:—

_	Pulv. Sod.	Pulv.	Double	
	Pot. Tart. B.P.	Seidlitz	Seidlitz	
Under 1 cwt Under 5 cwt Over 5 cwt. in one delivery	Per cwt.	Per cwt.	Per cwt.	
	s. d.	s. d.	s. d.	
	85 o	68 o	75 6	
	82 6	66 3	73 3	
	80 o	64 3	71 0	

Soda pot. tart. cryst. at 2s. 6d. per cwt. above powder, net, 14 days. Special prices for quantities. Contracts accepted subject to a rise and fall clause. The previous market alteration was on April 29, 1037.

SACCHARIN.—The Convention price for 550 is 37s. 6d. per lb., duty paid, with rebates for quantities.

Salicyllic acid (B.P.).—Quiet and steady. Makers' prices unchanged: five cwt., is. 7d.; one cwt., is. 7½d.; 28 lb., is. 8d.; 14 lb., is. 9d.; 7 lb., is. iod.; 4 lb., 2s. per lb. Smaller parcels at higher rates.

SALOL.—Quiet: spot, quoted unchanged at 2s. 6d. to 3s. per lb. for crystals, as to quantity, with powder at 23d. per lb. extra.

SANTONIN.—Quiet on spot. Holders quote £9 5s. to £10 per kilo, as to quantity, ex store.

Sodium salicylate (B.P.).—Makers' prices for home trade, powder or crystals, are: five cwt., is. $5\frac{1}{2}$ d.; one cwt., is. 6d.; 28 lb., is. 9d.; 14 lb., is. iod.; 7 lb., 2s. Smaller parcels at higher rates.

SULPHONAL.—Dealers' prices unchanged: crystals or powder, two cwt., 15s. 5d.; one cwt., 15s. 1od.; 56 lb., 16s. 1d.; smaller parcels up to 16s. 7d. per lb.

Tartaric acid (B.P. crystals).—Market steady; business about average. British makers quote at is. ild. per lb., less 5 per cent. discount. Dealers offer foreign materials at competitive prices.

Theobromine.—Current prices for pure Continental material are: two cwt., 7s. iod.; one cwt., 8s.; 56 lb., 8s. 2d.; smaller quantities, \$s. 4d. per lb. Theobromine sodium salicylate: two cwt., 6s. 3\dd.; one cwt, 6s. 4\dd.; 56 lb., 6s. 5\dd.; smaller packages, 6s. 6\dd. per lb., delivered; 5-lb. tins free, smaller packages extra.

THYMOL.—Standard prices are as follows: synthetic, fine white, one cwt., 6s.; 56 lb., 6s. 4d.; 28 lb., 6s. 9d.; less than 28 lb., 7s. 6d. per lb., ex ajowan seed, one cwt., 8s. 5d.; 56 lb., 8s. 10½d.; 28 lb., 9s. 5½d.; 14 lb., 10s. 6d. per lb.

Vanillin.—The Convention prices for this product are unchanged: ex clove oil or guaiacol, five cwt., 12s. 9d.; one cwt., 13s.; 56 lb., 13s. 3d.; smaller quantities at 13s. 9d. per lb.

Crude Drugs, etc.

ACONITE ROOT.—Napellus is very scarce on spot and sellers demand 85s. per cwt., duty paid. New crop will not be ready for at least two months and there is complete absence of Japanese and Indian.

AGAR.—No further offers for August-October shipment have come through and Japanese dealers report that stocks have been practically exhausted: spot, Kobe No. 1, 4s.; No. 2, 3s. 8d. to 3s. 9d.; Yokohama No. 1, 3s. 9d. per lb.; shipment, Kobe No. 1, 3s. 7d.; No. 2, 3s. 4d.; Yokohama No. 1, 3s. 3d. per lb., c.i.f.

ALKANET ROOT.—Spot, quoted at 45s. per cwt.

ALOFS.—Mails from Curação indicate that this year's crop amounts to only half last year's; this view may, of course, not require total acceptance at this juncture. Cape, spot, 63s. to 64s.; shipment, unchanged at 62s. 6d. to 63s. per cwt., c.i.f., as to quality. Curação, spot, rather firmer at 110s. to 125s., as to quality; shipment, 110s. asked, but business reported done at 107s. 6d. per cwt., c.i.f.

Antimony.—Chinese crude, spot, £40; shipment, August-September, £36, c.i.f. English regulus, £82 10s. to £83 10s., ex store.

ARNICA FLOWERS.—Quoted on the spot at 1s. 3d. per lb.

Balsams.—There has been a sharp rise in the replacement cost of Canada, which is reported scarce at the source. Tolu, 1s. 10½d.; Canada, 3s. 4d; Copaiba, 2s. 6d.; Peru, 5s. 6d. per lb., spot.

Buchu.—Business quiet and prices unchanged at the prices recorded last week.

Burdock Root.—Available on the spot at 37s. 6d. per cwt.

Camphor.—Japanese monopoly grade is steady at £8 10s. per 100 lbs., and not as given last week. Japanese, spot, tablets, 2s. $7\frac{1}{2}$ d.; powder, 2s. $3\frac{3}{4}$ d.; slabs, 2s. $3\frac{1}{2}$ d. per lb., ex store.

CANTHARIDES.—Routine demand for Chinese continues and prices are steady: spot, 2s. 3d. to 2s. 4d. per lb., as to quantity; shipment, 1s. 1od. per lb., c.i.f.

Cardamoms.—Spot market very steady: Bombay, 6s. 9d.; Aleppy greens, 4s. 6d.; bleached, scarce, 4s. 6d. to 6s. 3d. per lb., as to quality.

CASCARA SAGRADA.—No change in the spot position, but shipment is rather easier and business might be done around 46s, 6d., c.i.f.: spot, 67s. 6d. to 70s. per cwt., as to quality, with 1937 crop available at 62s. 6d. per cwt.

CASCARILLA BARK.—Quill, offered at is. 4d., and siftings at is. 3d. per lb., ex store.

Celery seeds.—Business is quiet at 85s. per cwt., spot, for bulk quantities.

Chamomiles.—Reports indicate that new crop Belgian are of good quality, and the harvest was well up to average in quantity. In view of the considerable hold-over from last season, no firming of price is anticipated, the figures quoted being from 120s. to 130s., c.i.f., as to seller and quality.

CLOVES.—Market about steady, with shipment prices fractionally above and Madagascar spot fractionally below last week's figures: Zanzibar, spot, 8\frac{3}{4}\text{d}.; shipment, August-September, 8\frac{1}{4}\text{d}. per lb., c.i.f.; Madagascar, in bond, 7\frac{7}{8}\text{d}.; shipment, August-September, 7\frac{1}{8}\text{d}. per lb. c.i.f.

The landings of Zanzibar in London during the week ended August 7 were nil and the deliveries 37, leaving a stock of 3,779. From January 1 to date the landings of Zanzibar have been 4,997 and the deliveries 2,924. Landings of Madagascar for the week ended August 7 were nil, and the deliveries 43, leaving a stock of 4,405. From January 1 to date the landings of Madagascar have been 5,234 and the deliveries 2,999 packages.

COCONUT (DESICCATED).—About steady and tending firmer: spot, fine, 23s.; medium, 22s. per cwt.; shipment, halves, August, 21s.; September, 22s. per cwt., c.i.f., buyers.

Cod-Liver Oil.—Bergen reports only moderate business, with prices firm and suppliers holding in anticipation of better prices later: finest Lofoten steam-refined non-freezing medicinal oil, 102s. per barrel, c.i.f., London.

COLOCYNTH.—The spot position is slow, with sellers anxious to do business at around 1s. 5d. to 1s. 6d. per lb., in bond, as to quantity.

ERGOT.—Quoted on the spot at 6s., although it is understood sales have been effected at rather under this figure. Portuguese prices for shipment are from 5s. to 5s. 6d., as to seller, and business has been refused under the lower figure mentioned. Some reluctance to quote from Portugal is noticeable. Polish, for shipment, 5s. per lb., c.i.f.

Gentian.—Quoted variously from 47s. 6d. to 50s. for Jugo-Slav root, as to seller, with best red French held for 52s. 6d. to 55s. per cwt., spot.

GINGER.—West African, spot, is weaker again at 57s. per cwt. For arrival, sellers, 51s. per cwt., c.i.f. Jamaican, from 70s. for small grinding in bags to 110s. per cwt., c.i.f., for bold in barrels, as to quality.

Gum acacia.—The position is anomalous. Arrivals at the source are reported as smaller, and in view of comparative scarcity shippers are asking 60s. per cwt., c.i.f. Supplies are available on the spot at 54s., while near afloat is to be had at as low as 52s. per cwt.

Henbane.—Steady at 75s. per cwt.

HENNA.—Best green Egyptian quoted on the spot at 35s. 6d., with brown at 32s. 6d. per cwt., ex store.

IPECACUANHA.—Buyers are not attracted to the firm prices for which sellers are holding out. Matto Grosso, &s. per lb., ex store. No shipment offers.

IRISH MOSS.—Quoted easier at 45s. to 6os. per cwt., according to quality.

JALAP.—High-testing (16.8) held for is. 5d. per lb., spot.

Kola nuts.—West Indian halves steady at 3½d. per lb., ex store.

LOBELIA HERB.—Small interest is being shown in this herb, for which the price is easy around 5d. to 6d. per lb.

Lycopodium.—Quoted rather firmer at 5s. 2d. per lb., spot.

MENTHOL.—Slow; spot prices steady: K/S brands, spot, 13s.; in bond, 11s. 3d. to 11s. 6d.; shipment, October-December, easier at 10s. 6d. per lb., c.i.f.

Mercury.—Prices unchanged from last week.

Orange peel.—Thin cut available on spot at 11d. to 1s. per lb., as to quality.

ORRIS ROOT.—Quoted on the spot at 35s. per cwt.

Pepper.—Telicherry and Aleppy are firmer forward; other varieties steady: Lampong (in bond), spot, 3d.; shipment, sellers, August-October, 2\frac{1}{2}d.; sellers, October-December, 3d.; buyers, January-March, 3\frac{1}{2}d. per lb., c.i.f. Tellicherry, spot, 4\frac{1}{2}d.; shipment, August-October, 37s. 6d., c.i.f. Aleppy, spot, 4d.; shipment, August-October, sellers, 36s. per cwt., c.i.f. White Muntok, spot (in bond), 6d.;

shipment, August-October, 43d.; October-December, buyers, 42d.

Pimento.—The market has become considerably firmer: spot, 7½d. per lb.; shipment, August-September, 65s. per cwt., c.i.f.

Psyllium seed.—A quantity is available at 9d. per lb., ex store.

RHUBARB.—Good consuming business has been done, particularly in the rough round qualities: spot, Shensi, 3s. 9d. to 4s.; pickings, 2s. 9d.; rough round, high dried, all pinky, 1s. 1od.; ordinary quality, is. 9d. per lb.

Rubber.—Prices ran firmer during the early part of the week, but were later somewhat easy at the levels given: Standard smoked ribbed sheet, spot, 8_3^2 d.; shipment, August, 8_3^2 d.; September, 8_3^2 d.; October-December, 9d.; January-March, 91-d. per lb.; April-June, 98d. per lb.

SAFFRON.—Quoted at 77s. 6d. to 8os. per lb., as to quantity.

Seeds.—Anise.—Bulgarian, spot, 37s. 6d., duty paid. Canary.—Quiet, quoted at: Mazagan, 23s. 9d.; Turkish, 22s.; Plate, 22s. 6d.; Spanish, 30s. to 45s., duty paid. Caraway.—Dutch, spot, 33s. 6d., duty paid; f.o.b. Holland, quoted at 29s. 6d. Coriander.—Morocco, spot, 23s. 6d., duty paid; 23s., c.i.f., quoted for prompt shipment. Cumin.—Malta, spot, 45s., duty free; Morocco, old crop, 45s., duty paid. Fenugreek.—Morocco, spot, offered at 14s., duty paid; 11s. 6d. quoted for new crop, August shipment. Musiard.—English, 21s. to 30s. per cut, 3s. to quality. 21s. to 30s. per cwt., as to quality.

SENEGA.—Again easier on spot, at 2s. 3d. per lb., ex wharf; shipment, after weakening, is now back at around 2s. rd. per lb., c.i.f. (August-September).

Senna.—Business continues on the quiet side, and there are no price changes from those given in last week's issue.

Shellac.—Standard TN orange, spot, 46s. to 49s.; for delivery August, 45s. 6d.; October, 46s. 6d.; December, 47s. 6d., sellers; for arrival: sellers, August-September, 41s. 6d. per cwt., c.i.f.

SQUILL.—Quoted rather firmer at around 30s. per cwt., spot, for moderate or good white.

Tonka beans.—Market steady: spot, 3s. 4d. per lb. for frosted Para beans; shipment, 2s. $7\frac{1}{2}$ d. per lb., c.i.f.

TRAGACANTH.—There has been rather more inquiry for the white qualities, and business has been done at £70 to £72 Ios. on the spot. Seconds have been easier at £65 to £65 Ios. per cwt., but buyers have been shy, probably expecting to hold out till the new crop arrives in November.

TURMERIC.—Shipment prices again firmer: spot, 27s.; shipment, 24s. 6d. to 26s. 6d. per cwt., c.i.f., as to quality

Valerian root.—Supplies are available at 35s. per cwt., ex store.

WAX.—BEES'.—After a decline, waxes are firmer generally. Conakry is easier. Dar-es-Salaam for shipment is becoming scarce. Carnauba is steady for near positions. Calcutta, bleached, spot, Carnauba is steady for near positions. Calcutta, bleached, spot, 1478. 6d.; shipment, August-September, 1448.; ordinary quality, spot, 1208.; shipment, August-September, 1148.; ordinary quality, spot, 1208.; shipment, July-August, 1188., c.i.f. Abyssinian, 1228. 6d., in bond; shipment, July-August, 1188., c.i.f. Benguella, spot, 1228. 6d.; shipment, ex Lisbon, 1678.; from origin, 1148. 6d., c.i.f. Conakry, spot, 1208.; shipment, 1198., c.i.f. Dar-es-Salaam, spot, 1278. 6d.; shipment, 1198. per cwt., c.i.f. Carnauba.—Market fully steady, supplies limited. Fatty grey, spot, 1758.; shipment, affoat, 1678. 6d., c.i.f.; July-August, 1678. 6d.; December-January, 1648., c.i.f. Chalky grey, spot, 1708.; shipment, new crop, 1608., c.i.f. Primeira, spot, good quality, 2208.; f.a.q., 2158.; shipment, July-August, 2078. 6d., c.i.f. Mediana, spot, 2108.; shipment, 2028. 6d., c.i.f.

Essential Oils, etc.

The market continues seasonally inactive. Geranium (Bourbon), lemon (Sicilian) and Palmarosa are easier, while Madagascar clove, eucalyptus, American peppermint, bergamot and citronella (Ceylon and Java, shipment) are firmer.

ALMOND.—Continues quiet and steady: English (fixed), cwt. lots, 3s.; smaller parcels, up to 3s. 6d. per lb.; foreign, cwt. lots, 3s.; smaller parcels, up to 3s. 3d. per lb. French, bitter, 6s. to 6s. 3d. per lb., as to quantity.

Anise (STAR).—Continues firm and steady on the spot. oil, spot, leads, 3s. 6d.; tins, 3s. 3d.; drums, 3s. per lb., ex store. There are still no offers of B.P. oil from the source; 2s. 11½d. is quoted for an oil of 142 deg.

BAY.—Average business at steady prices: 49 to 50 per cent., 4s. 7½d. to 4s. 9d.; 59 to 60 per cent., 4s. 9d. to 4s. 10½d. per lb., as to quantity.

Bergamor.—Tending firmer on the spot, the price now standing at around 15s. per lb. There are no authentic offers for shipment and the forward position is indeterminate.

Bois of Rose.—Business and prices have been alike steady: Brazilian, spot, 6s. to 6s. 3d., in drums, and up to 6s. 9d. per lb. for small lots. No shipment offers.

CAJUPUT.—Unchanged; prices steady as quoted: B.P., spot, 2s. 5d. to 2s. 7d. per lb., as to quantity.

Cananga.—A dull market, but prices about steady: spot, 6s. 12d. to 6s. 42d., as to seller; shipment, 6s. per lb., c.i.f.

CARAWAY.—No change in the position reported last week: Dutch rectified, 7s. 9d.; crude, 7s. 4d. per lb., landed and duty paid.

Cassia.—Market steady for good quality (80-85 per cent.) oil on spot, quoted at 3s. 3d. per lb. for leads. Shipment, leads, 3s. per lb., c.i.f.

CEDAR LEAE.—Small lots on spot are now quoted from 5s. to 5s. 3d. per lb., ex store.

CEDARWOOD.—Market is quiet, with quotations for bulk lots competitive: African, in drums, is.; smaller packages, up to is. 3d. per lb.; American, in drums, is.; smaller packages, up to is. 3d. per lb.; shipment, 11½d., c.i.f.

CINNAMON LEAE.—Steady on the spot; easier forward: spot, 3s. 8d. for repacked oil in tins, ex store; shipment, 2s. 102d. per lb., c.i.f.

CITRONELLA.—Java, for shipment, is appreciably firmer and Ceylon ractionally so: Ceylon, spot, drums, 1s. 9½d. if available; smaller parcels, up to 2s.; shipment, drums, 1s. 6½d. per lb., c.i.f. Java, spot, drums, 1s. 11½d. to 2s.; smaller parcels, up to 2s. 4½d.; shipment, drums, 1s. 9½d. per lb., c.i.f.

CLOVE.—Zanzibar is unaltered but Madagascar is distinctly firmer afloat: Madagascar, shipment, August-October, 3s. Id. to 3s. 2d. per lb., c.i.f., as to quantity. English distilled oil, cwt. lots, 5s. 6d.; smaller parcels, up to 5s. 9d. per lb.

EUCALYPTUS.—A strong market—very firm: Australian, 70 to 75 per cent., spot, is. 8½d., in drums; is. 9d., in tins; shipment, is. 6d., in drums; is. 6½d., in tins; 80 to 85 per cent., spot, is. 9½d., nominal; shipment, October, around is. 8d. per lb., c.i.f.

Geranium.—Prices for Bourbon from the source are now to hand, and are rather lower than anticipated, being around 210 to 215 francs, c.i.f.; Algerian, 220 francs per lb., c.i.f.

Grape-fruit.—A steady market: Florida, 11s. to 12s. per lb., as to quantity. Californian, 10s. 6d. to 12s., ex store.

Ho (Shiu).—Continues to be firmly held by spot suppliers for from 3s. 6d. per lb., as to seller. No shipment offers.

JUNIPER BERRY.—Steady and unchanged: B.P. quality, 3s. 6d. to 4s. per lb., ex store, as to quantity.

LAVENDER.—New crop reports are still awaited. Until they arrive prices are purely nominal.

Lemon.—For Sicilian, both hand and machine pressed, easier shipment prices obtain. Californian is cheaper on the spot. Business is mainly quiet. Sicilian hand-pressed, IIs. 6d. to I2s., spot, and IIs. 4d. to I2s., c.i.f., as to quality and seller; machine-made, IOS. 9d. per lb., c.i.f. Californian cold-pressed, 9s. 6d., spot, and open left c.i.f. 9s. per lb., c.i.f.

Lemongrass.—The market has again been neglected, and prices remain steady: spot, in drums, 1s. 102d. to 2s. per lb., as to quality; shipment, is. 64d. per lb., c.i.f.

Mandarin.—Quoted on the spot at 24s. upwards, as to quality and quantity; shipment, around 24s. 6d. per lb., c.i.f.

NEROLI.—Perfumery quality quoted at 27s. 6d. to 30s. per oz. for

new crop. Other grades, 18s. to 25s. per oz. NUTMFG.—American and Dutch, spot, continue steady at 5s. 7½d.

to 5s. 9d. per lb., as to quantity. Orange.—Good-quality French Guinea oil commands 6s. on the spot, in drums, with higher prices for repacked oil in tins. Shipment is quoted around 5s. One offer from origin of 4s. 7½d. is reported. Tanganyika bitter, in tins, 8s. per lb., spot.

Palmarosa.—Business has been quiet and shipment prices continue to weaken, with the spot price easy in consequence: spot, around ios. per lb.; shipment, 9s. to 9s. 3d. per lb., as to seller.

PATCHOULL.—The amount of business being done in this oil is inconsiderable. Singapore oil, on spot, 15s. 3d.; Seychelles, around 13s. per lb., ex store.

PEPPERMINT.—Consuming demand has been good. Offers from Japan for August-September shipment are being sparingly received: spot, 4s. 10d. to 5s., as to brand and seller; shipment, August-September, 4s. 8d. to 4s. 9d., with resellers at 4s. 7d.; October-December sellers, 4s. to 4s. 4d.; buyers, 3s. 11d. per lb., c.i.f. American natural oil in drums is quoted firmer at around 2 dollars 50 cents per lb., c.i.f., but there is no further news of new crop.

Petitgrain.—A quiet market, prices remaining steady: spot, 4s. 3d. to 4s. 4d.; shipment, 4s. 12d. per lb., c.i.f.

ROSEMARY.—No offers of new crop Spanish: spot, quoted at 3s. 6d. to 4s. 3d. per lb., ex store, as to quality and quantity.

Sandalwood.—Genuine East Indian Mysore, in one-case lots spot, 19s. per lb. Oil described as East Indian from 17s. per lb., c.i.f., for bulk quantities. English-made East Indian, 22s. 6d. to 25s. per lb., as to quantity. English-made West Indian, 7s. 3d. per lb. Australian, steady at 5s. 3d. per lb. for 7-lb. tins; one case at 14s. 9d. and five cases at 14s. 6d. per lb.

Sassafras.—Spot market quiet, with natural oil quoted from 3s. 7d. to 3s. 9d. per lb.

Spearmint.—Spot and shipment quotations vary as to quality: spot, from 8s. 42d. to 9s.; shipment, 7s. 3d. to 8s. per lb., c.i.f.

Spike.—Genuine Spanish quoted on spot at 5s. 3d. to 5s. 9d. per lb., as to seiler. No shipment offers.

WORMSEED.—On the spot, U.S.P. oil is quoted at 12s. per lb.; for shipment, 11s. 3d. per lb., c.i.f.

Correspondence

Correspondents may adopt an assumed name, but must in all cases furnish their real name and address to the Editor

British Pharmaceutical Conference

SIR,—After the Conference was over I was tempted to take a short holiday in the district, hence my delay in performing a duty which clearly falls upon me as president of the Conference. On behalf of all the members who visited the seventy-fourth meeting-I am certain that the opinion was unanimous—I want to say how greatly we appreciate the months of hard work which the Local Committee and the local organisation generally put in so that all of us should have a comfortable and enjoyable time. I have attended many Conferences, and have seen none where the arrangements were more excellent or the whole meeting went off more smoothly. Mrs. Marns wishes me to pay a special tribute to the ladies' committee. Their help and kindness made the visit more than memorable and like a very pleasant holiday. The kind thought that prompted the presentation of a handsome casket to each lady who attended the banquet was but one token of the thoughtfulness of the ladies' committee. The Liverpool Conference 1937 will be a lasting and happy memory for all who attended.—Yours faithfully,
Ealing, W.5.
Thomas Marns.

The Conference Chairman's Address

Sir,—I do not know why "Respectful" (C. & D., August 7, p. 171) should expect to find in his daily paper a report of the address of the chairman of the British Pharmaceutical Conference. I did not expect it, but one of my doctor customers told me that there was a good report of it in "The Times" and "The Lancet"; I do not subscribe to these papers, but have bought them on this occasion, as I wanted to see them. The article in "The Times" was at the top of a column, and the article in "The Lancet" was in a very prominent position. Both of them laid stress on the a very prominent position. Both of them laid stress on the status of the pharmacist, and the main theme in both cases was, to quote the words of your correspondent, "the qualifications of pharmacists and the services they perform under the various Acts." Since then I have made inquiries and have found that more than a score of the principal daily papers published articles on the same lines.—Yours faithfully, F. W. YEOMANS.

Birmingham, 11.

Responsibility for Locums

SIR,—The Portsmouth Pharmaceutical Service Subcommittee (C. & D., August 7) has recommended a deduction of £1 in the case of a test prescription which showed a deficiency of one ingredient, the explanation given being carelessness in measuring by a locum. We know that a pharmacist is responsible for the acts of his employees in this work of insurance disconning, but where a showing taken a heliday and employees. dispensing, but when a chemist takes a holiday and employs a locum, surely the latter should take over the responsibility. The chemist himself cannot supervise the work of a locum during his absence, neither is it expected that the work of another qualified man requires supervision. It seems hard that he should be penalised for a mistake made by someone the is obliged to leave in a position of trust after he has taken the usual precautions. Moreover, a test taken during his absence is no test of the accuracy of the dispensing as carried on by the contractor in the normal way of business. I think that if I were filling a position as locum and a test prescription was taken, I should point out to the inspector that a possible error would be no criterion of the work of the pharmacy as a rule. I quite realise that dispensing done by locums could not be exempted from the testing scheme; but when it happens that there is a deficiency in a prescription by a locum, it should not be reckoned as a black mark against the chemist whose business he is then running.—Faithfully yours,

Testem (9/8).

Fees for Sunday N.H.I. Work

SIR,—At a meeting of the Warwickshire Pharmaceutical Committee (C. & D., August 7, p. 146) a letter was read from the Worcester Pharmaceutical Committee on the question of fees for Sunday dispensing. If it is intended to promote the payment of an extra dispensing fee for Sunday work, in the same

way that an "urgent" script carries a double fee, then I am in agreement with the principle. All classes of organised labour receive extra pay for overtime work, and most Sunday workers get some equivalent in the shape of extra money. The chemist's assistant now receives the statutory hours off during the week in which he does Sunday duty. Although it would only be fair for extra dispensing fees to be paid for prescriptions dispensed on Sundays, the drug fund is a fixed amount, and any additional charge on it means that the sum to be distributed will not go so far. Therefore, before trying to secure extra allowances we should concentrate on getting payment in full whatever the totals amount to. We have no say in the quantities of medicines and appliances ordered, and cannot limit the constantly increasing expense; we should on that account have sufficient courage and unity to stipulate that if we are to sign a new contract next year it must embody payment in full and the discounting clause must go. Yours truly,
Doublit (10/8).

Unprofitable Branches

SIR,—" Phœnix" (C. & D., July 24, p. 107) says that the employment of a qualified chemist renders a small branch economically impossible. How many small branches show a profit that is worth while, taking into consideration the amount of extra work the ordering, book-keeping and supervision entail? Recently I have had the opportunity of examining the figures of some of these small pharmacies; they ranged from f15 to £20 a week, and if a gross profit of a third is obtained it leaves from £5 to £7 a week to pay all standing expenses, the manager's salary, or in the case of a one-man shop for the proprietor to live. If the chemist is working it for himself and lives on the premises he may manage to scrape along, but where a manager has to be employed there cannot be any net profit left over, even at the low rate of wages now obtaining in some of these shops. These conditions of trading form one of the factors which keep wages on a low level. With the increasing scarcity of apprentices, and consequently a less number of qualified chemists in the next few years, these conditions may right themselves. The single-handed chemist may either benefit by the general rise in selling prices, or he may find it better to take a berth as an assistant or manager at a higher income than he has been making for himself. And the first thing to be done is to secure proper payment for N.H.I. dispensing. Steps should be taken immediately to ensure that M.P.s from all over the country are made aware of the inadequacy of the drug fund, and to pave the way for our demand for a new and equitable contract.—Yours truly,

CONTRACTUAL (26/7).

Subscribers' Symposium

For interchange of opinion among "C. & D." readers and brief notes on business and practical topics.

Appreciations

We may say that the circulation of The Chemist and DRUGGIST must be almost unique, as frequently we get inquiries from the extreme north of Scotland and the most southern parts of England.—L. M. (20/7).

The Annual Special Issue of The Chemist and Druggist is always a noteworthy production, and this year's issue . . especially good. We were naturally interested in the article on animals used in trade mark designs and the reference to the Sphinx . . . Equally appropriate is the choice of the Phoenix as the emblem of The Chemist and Druggist with its power to renew itself from year to year and thus go on from strength to strength. In the article on "Modern Ideas in Shopfitting" we were very pleased to see the note on the renaissance of the carboy which seems to be coming into its own again. . . . Another useful feature of this issue is the series of brief biographies of British pharmacists overseas. "T.K's Monthly."

Miscellaneous Inquiries

We do not undertake to analyse and report upon proprietary articles nor to publish supposed formulas for them

Z. F. (Palestine) (6/73).—Toiler formulas.—The book which meets your requirements is "Pharmaceutical Formulas," Volume II, from which publication the following have been taken:—

	E_{ℓ}	ıu de	Quinin	e		
Red sand		ьd				zss.
Orris root	t	• • •		• • •		₹iv.
	• • •	• • •	• • •	• • •	• • •	gr. xx.
Nutmeg		• • •	• • •		• • •	gr. x.
Rectified	spirit		• • •	• • •	• • •	ž xviij.
Water						₹ vi.

Macerate for a week, filter, and to the filtrate add

Quinine hydrochloride gr. xx.
Eau de Cologne 5j.
Oil of lavender Ill vj.

Mix the cochineal with the glycerin before adding. Set aside for two weeks and filter.

Quinine Hai	v Lo	tion	
Quinine sulphate			 gr. xx.
Castor oil			 ₹j.
Tincture of canthariding	1		 $\frac{7}{3}$ ss.
Extrait of jasmine			 Зiij.
Eau de Cologne			 žiij.
Oil of bitter almond			 Щv.
Oil of bergamot			 3ss.
Rectified spirit			 ₹vüj.

Mix and colour with tincture of alkanet if desired.

M. M. E. (6/8).—MIRRORS.—See C. & D., June 19, p. 712.

V. M. C. (10/8).—Lemon and barley drinks.—These may be made either from powdered pearl barley or from a decoction of pearl barley (two ounces to the pint or concentrated four ounces to the pint). In powder preparations there is usually an addition of citric acid, sugar and oil of lemon, while liquid preparations are flavoured with lemon juice and flavouring from the peel. A satisfactory preparation could be made in the following manner: Boil for ten minutes four ounces of pearl barley and the rind of one lemon with two quarts of water; add sugar to taste and the juice of two lemons. Alternatively, evaporate a pint and a half of decoction of pearl barley, B.P. 1885, to one pint. Add sugar to sweeten and the juice of one lemon.

S. T. C. (6/81).—Chest vapor Rub.—The following recipe appears in "Pharmaceutical Formulas," Volume I:—

 Ol, camph. essent
 I · o

 Ol, cajuputi
 0 · 2

 Menthol
 0 · I

 Ol, eucalypti
 0 · I

 Paraf, mol. alb.
 I o · o

A. J. C. (30/7).—IMITATING POISON GAS.—We are not aware of any harmless colouring which could be used for making sodium carbonate crystals resemble mustard gas or chloropicrin. We understand that several efforts have been made to produce an effective non-poisonous substitute for poison gases for training purposes, but none of those so far have been entirely satisfactory.

 $W.\ L.\ (6/8)$.—Muscle oil.—The formula for which you ask is as follows:—

 Almond oil
 ...
 ...
 60 · 0

 Castor oil
 ...
 ...
 60 · 0

 Oil of geranium (African)
 ...
 0 · 6

 Oil of camphor (essential)
 ...
 0 · 4

 Oil of sassafras
 ...
 ...
 ...

L. A. J. (6/71).—RESORCINOL IN A MIXTURE.—This chemical is steadily oxidised by the alkali present, but such change is not likely to cause any inconvenience to the patient as reduction would take place in any case when the resorcinol came in contact with the mucous membrane. It would be as well to get in touch with the prescriber and call his attention to the incompatibility.

E. O. S. (10/84).—Soil sterilisation.—The usual methods of sterilising soil are by means of (1) baking, (2) steaming, (3) chemicals. Among the last-mentioned are formaldehyde, carbolic acid, carbon disulphide, calcium cyanide, nicotine, naphthalene and paradichlorbenzene. Steaming or formaldehyde are the two methods most widely used by gardeners. Formaldehyde is used at the dilution of 1 part (40 per cent.) to 49 parts of water, and applied at the rate of 4 gallons per 10-12 square yards. For fumigation of a glasshouse the most commonly used fumigant is hydrocyanic acid gas, while on a small scale tetrachlorethane and naphthalene have been used. For the first mentioned the process is as follows: Add 1½ oz. of sulphuric acid to 3 oz. of water, and then immediately prior to closing the house add 1 oz. of sodium cyanide (98 per cent.). To arrive at the dose of fumigant required calculate the size of the house. For an isolated house in a moderate state of repair, ¼ oz. of cyanide should be used per 1,000 cubic feet.

A. M. (6/72).—Tripe bleaching powder.—This appears to consist of sodium perborate and sodium phosphate.

E. J. (6/82).—Indian brandy.—The formula for which you ask is as follows:—

Itrosyl			 ₹j:.
Compound tincture	of rhuba	arb	 Зüj.
Chloroform water			 Oiss.
Glycerin			 ₹viij.
Syrup			 Ovj.

Mix in the above order.

F. R. B. (7/44).—How to use Henna.—About seven ounces of henna powder is required for one application. This is divided into two portions. With portion No. 1 an aqueous infusion is made, using one pint of boiling water. This infusion is used while still hot, and is applied with a brush. With portion No. 2 make a moderately thick paste with water. Apply to the hair, and hold in position with a towel wrapped round the hair. Allow to remain thirty minutes. Then rinse the hair with tepid water. A recolouring is necessary within about thirty days.

Retrospect of Fifty Years Ago

Reprinted from "The Chemist and Druggist," August 13, 1887

Board of Trade Returns

The Board of Trade returns for July show a decrease on the value of the total volume of our foreign trade compared with the month of July 1886, the figures (imports and exports together) being £53,681,155, against £54,029,978. Yet, upon consideration of the detailed items, we meet with many satisfactory evidences of the growing expansion of the most important branches of trade, and these signs become still more pronounced upon comparing the figures for the first seven months of 1887 and 1886. . . Turning to the commercial movement in articles more directly connected with the drug and chemical trades, we find a steady decrease in the values of the imports of the principal articles, most pronounced in the case of simple drugs, of which we received in round figures from January to July 1885, £445,000 worth; 1886, £430,000; and 1887, £360,900. The figures relating to chemicals are £805,000, £782,000, and £768,000 respectively. . . Our exports of drugs and medicinal preparations, soaps, colours and paints are extremely satisfactory, and show, at any rate as regards the two latter branches of business, we have little to fear from competition. Drugs and medicines, in round figures, we exported from January to July 1885 to the extent of £467,000; 1886, £476,000; and 1887, £482,000. . . . The value of foreign chemical products, re-exported via Great Britain, which fell from £158,000 in the first seven months of 1885 to £95,000 in the corresponding period of 1886, has this year suddenly advanced again to £158,000.



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4-5 lb. Parcels and ½ cwt. Cases

New Pack ½ lb. Nett weight Packets
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PURE POWDERED RICE STARCH

323-5-7 Corn Exchange Buildings, Cathedral Street, MANCHESTER 4

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SOUTH AFRICA

is an Important and Growing Market for British Products

LENNONS,

the Old Established Chemists, cover the whole of the Country. They have Efficient Wholesale Facilities for Intensive Distribution and Distinctive Retails in the Important Towns

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Those who wish to exploit the Market or increase their present business should write the London Office:—

LENNON LIMITED,

12/14 LAFONE STREET, LONDON, S.E.1

Standard Synthe

Managing Director: J. L. Hindle, B.Sc. "HINDLE WAKES" UP THE INDUSTRY

SPECIALISTS IN PURE ESSENTIAL OILS

We are actual distillers and first-hand importers of:-

CINNAMON BARK OIL, B.P. JUNIPER BERRY OIL, B.P. GENUINE OIL OF SWEET BIRCH (WINTERGREEN CIL) LAVENDER OIL FRENCH 38/40%, B.P. EUCALYPTUS OIL 70/5%, B.P.

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SOLAZZI Liquorice Juice

The Chemist's Brand

Should any enquiries as to the composition of SOLAZZI be received from the Public, Chemists are requested to emphasise the fact that SOLAZZI is not included in the category of Secret Remedies, and that the following guarantee obtains with every parcel.

Solazzi Juice is

guaranteed to consist entirely of the condensed extract of finest Calabrian Liquorice Root. without any admixture whatever





BURNSIDE'S AUSTRALIAN EUCALYPTUS

(Shipped by W. K. BURNSIDE PTY., LTD., 34/36 JEFFCOTT STREET, MELBOURNE)

ALL B.P. GRADES

70/75% B.P. A specially rectified Oil of high and very uniform Quality

Packed in Cases and Drums STOCKS IN LONDON

80/85% B.P. Distilled from E. POLYBRACHTEA The finest B.P. Oil obtainable

All Grades can be relied upon to be Constant in Quality, Odour and Colour 15 PHILPOT LANE

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WILSON & MANSFIELD, Ltd. WHOLESALE ONLY



Hubbuck's Pure Oxide of Zinc

is made by sublimation and is warranted to contain upwards of

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of pure oxide; in fact, the impurities traceable are not

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24 Lime Street, London, E.C. 3 MANUFACTURERS OF WHITE LEAD, WHITE ZINC, PAINT, OILS, COLOURS, VARNISHES, &c.

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Sold by the following Wholesale Druggists in Boxes of 7 lb. and 14 lb. stamped by the Manufacturers: also in 1-lb. Boxes and 1-lb. Glass Bottles:

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delphia

Rivista Italiana delle Essenze, dei Profumi e delle Piante officinali

EIGHTEENTH YEAR OF PUBLICATION

OFFICIAL ORGAN OF THE FENACHIMICI

Director:

Dr. EMMA FENAROLI

Editorial Offices:

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75% of those who enter a Pharmacy are suffering from Indigestion!

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The Famous **REXALL** Stomach Powder PRICE 2/= Per Bottle

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Enquiries from districts not covered by a Rexall Agency will receive every attention

UNITED DRUG COMPANY LTD.
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You can obtain all your

Pharmaceutical Preparations,

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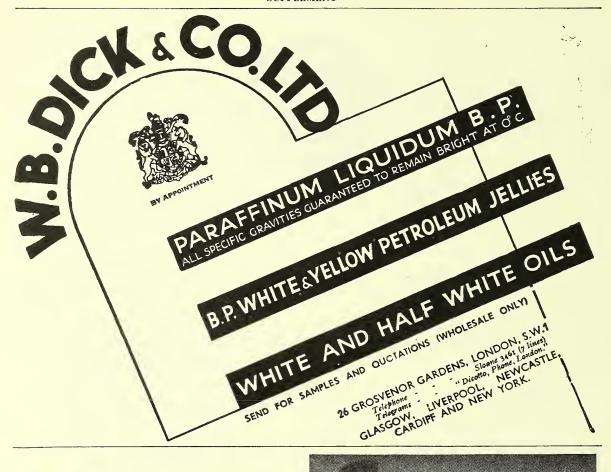
Ex-Lax Ltd. wish to acknowledge with thanks the many friendly and congratulatory messages received as a result of the recent change in their trade policy. INDIVIDUAL ACKNOWLEDGMENTS are being made as quickly as possible.

'EX-LAX' CELEBRATION BONUS OFFER

Details of this unprecedented offer were mailed to all qualified chemists last week. If you did not receive your copy, write at once to Ex-Lax Ltd., Slough, Bucks.

All order cards should reach Ex-Lax Ltd. by

AUGUST 18th, 1937





LANOLINE

(Adeps Lanæ) B.P., U.S.P. & D.A.B.6

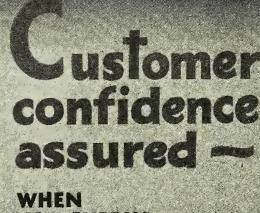
WOOL GREASE FATTY ACIDS, WHITE & HALF WHITE OILS B.P. PETROLEUM JELLIES, LIQUID PARAFFIN B.P.

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THE PHARMACEUTICAL LANOLINE CO.

CARNWATH ROAD, FULHAM, LONDON, S.W.6

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YOU SUPPLY

HYSICIANS

CEPHOS LTD., BLACKBURN

PREVENTION IS BETTER THAN CURE



ATOMIZER No. 15
This well-known nose and throat
Atomizer sprays oil or aqueous solutions with equal ease. Adjustable
tip permits spraying in any direction.

ATLAS ATOMIZER No. 20

Atomizer producing a medium spray from either oil or water solutions.

compact and dependable nasal

Every home needs one or more DeVilbiss Atomizers. DeVilbiss Atomizers have been used and prescribed by the medical profession for more than 45 years, and to-day the DeVilbiss range includes improved Atomizers of every required type. DeVilbiss Atomizers are reasonably priced, fully guaranteed and carry handsome profits. Conspicuously displayed, they stimulate the sale of medical and antiseptic solutions—and sell themselves.

Price list on application

DeVilbiss ATOMIZERS



DeVILBISS
NEBULIZER No. 45
For oils, Produces a large volume of extra dry vapour for deep inhalation.



ATLAS ATOMIZER No. 25
A nose and throat Atomizer of high
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Gives a fine, continuous spray.

AEROGRAPH CO., LTD., 43, HOLBORN VIADUCT, LONDON, E.C.1

GV8-89



Schweppes

SUGAR-FREE GINGER ALE . . . SUGAR-FREE TONIC WATER. . . SUGAR-FREE SPARKLING LIME

Approved by the Institute of Hygiene and the Diabetic Association.

These beverages have been analysed by the Institute of Hygiene and found "free from sugar and metallic contaminants." The analyses shown have been accepted by the Medical Advisory Council of The Diabetic Association and recommended for diabetic and obese subjects.

ANALYSIS SHOWED THE FOLLOWING RESULTS:

Schweppes Sugar-Free Ordinary Dry Dry Ginger Ale Ginger Ale		Schweppes Sugar-Free Tonic Water		Ordinary Tonic Water	Schweppes Sugar-Free Sparkling Lime		Ordinary Sparkling Lime	
Carbohydrates	absent	6.2%	Carbohydrates	absent	9.1%	Carbohydrates	absent	11.8%
Protein	absent	absent	Protein	absent	absent	Protein	absent	absent
Fat	absent	absent	Fat	absent	absent	Fat	absent	absent



PHARMACY for the PHARMACIST



GENOZO TOOTH 6d.: 1/-: 1/6

THE "CHEMISTS ONLY" TOOTHPASTE

CYSTOPURIN 1/3:3

CYSTOPURIN 1/3:3

BACKACHE AND KIDNEY REMEDY
KIDNEY REMEDY
KIDNEY REMEDY

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1/6

THE "CHEMISTS ONLY" PILE REMEDY

The above "Chemists' Friends" lines are being consistently advertised. Will you help our policy of "PHARMACY for the PHARMACIST" by displaying and by personal recommendation? GENATOSAN LIMITED, LOUGHBOROUGH, LEICESTERSHIRE.

MILTON INTRODUCE NEW EMERGENCY FLASK

Fourpenny pack for pocket and handbag

In emergencies the remedy that's best is the remedy that's handiest. This is the simple, sound why and wherefore of the new Milton Emergency Flask. Fitting easily into pocket or handbag, the new pack allows Milton users always to have Milton with them. Big sales are assured. Milton users will want this handy flask for burns, cuts, scratches, stings, bites, sunburn and a dozen other reasons. Heavy Milton advertising will bring news of the flask not only to Milton users, but also to others who so far haven't used Milton.



SPECIAL INTRODUCTORY OFFER

An order of not less than two dozen flasks now will secure you the special introductory discount. One carton of two dozen for 5/- instead of 6/-. That means a profit of $37\frac{1}{2}\%$ on turnover, or the equivalent of bonus terms on a 5/- order.

fust send a postcard to Milton Proprietary Ltd. to-day. Supplies will be sent by return, packed in the attractive display cartons pictured below. But—act at once. The introductory offer is available only till Aug. 21st, but the Emergency Flask can be included at 3/- per doz. in Milton Bonus Parcels.



MILTON ON THE AIR!

Milton Antiseptic advertising is now using the radio, speaking to a new public, winning new customers, building new business for you!

business for you!
Programmes of ha

Programmes of half an hour each, four times every week, are broadcast from Radio Normandy on Wednesdays and Fridays, and from Radio Luxembourg on Tuesdays and Thursdays, all from 4 to 4.30 p.m.

All first class programmes that are putting up the sales of Milton!

MILTON IN THE PRESS!

Naturally press advertising for Milton Antiseptic continues. Forceful Advertisements are now appearing in the leading national and provincial newspapers, and, a new departure, the best of the large circulation women's weeklies and monthlies.

MILTON PROPRIETARY LTD., JOHN MILTON HOUSE, LONDON, N.7.

INSECT BITE CREAM

Conveniently packed in collapsible tubes that can be carried in the pocket or handbag ready for immediate application.

Small, 5/6 doz. net. Large, 9/6 doz. net.

INSIDICATE BITE LOTION

Made with industrial alcohol, is penetrating but rapidly evaporates providing a cooling application that affords quick relief or acts as an effective repellent.

In sprinkler top bottles, 2 oz. 5/6 doz. net. 4 oz. 5/6 doz. net.

Name and address printed Free on three dozen.

MANUFACTURED BY

C. J. HEWLETT & SON, LTD., 35/42 Charlotte St., London, E.C.2



from Radio Lyons

JULY 15th to OCT. 8th . every Friday 10 p.m. - 10 15 p.m. We make you customers by tram, RADIO and Newspaper advertising etc.

OF ADDRESS

NOTE CHANGE HOBSON, TRIMBLE & CO. LTD.

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Patents and Tablets, for Packed Goods, for "Own Name" Specialities and the latest in Toilet Goods.

GOODALLS (LEEDS) LID., LEEDS, 1.

Write for

and the latest in loller Goods.

Tel.: 20435-9, 20430 (6 lines).

We are famous for QUICK DELIVERY—daily throughout most of Yorkshire.

wrist support is a sales stimulant NOTE THE PATENTED SIMPLE ELASTIC FASTENING STOCK & DISPLAY THIS PROFITABLE LINE The most simple to use, easy to fix fastener on the market—accept no substitute. Your customers will insist upon the original and popular Vic wrist support, with patented elastic fastening. Strong, durable, washable and hygienic. Strocked in Natural, Flesh Strong, de able, washable and hygien Stocked in Natural, Flesh and Tan by all leading Wholesalers.

6 Assorted Colours on Display Cards. Sole Manufacturers GROUT & CO. LTD., 35 WOOD ST., LONDON, E C.2



D'Scholl's 1335 Cash prizes to be awarded ...



Foot Happiness CAMPAIGN

UNIQUE 10 WEEKS LARGE-SPACE ADDITIONAL ADVERTISING THE CHEMISTS' OWN CAMPAIGN

Dr. Scholl's Foot Happiness Campaign which commenced on July 19th is the most ambitious drive yet undertaken to arrest the attention of millions of Foot Sufferers, and to bring profitable sales to you.

This 10 weeks' campaign of selected, page-dominating positions in each of the great national newspapers, is additional to regular Scholl Advertising, which continues day in and day out in newspapers and magazines.

Every Chemist will wish to link-up with the greatest and most extended advertising campaign we have ever launched.

Never before has there been an Advertising Campaign better worth linking-up with by Window and Counter Display than Dr. Scholl's Foot Happiness Campaign—beginning July 19th, 1937, and continuing for 10 weeks.

This is your chance!

Nothing to pay-No photographs-Very little to do.

For years past we have invited Chemists to participate in Window Display Competitions. This year all the disadvantages of such contests are eliminated.

Every Chemist has a chance to win one of the magnificent Scholl Cash Awards.

All that you have to do is to express on the official form, and in not more than 25 words, your reason for making a Dr. Scholl Window Display during the period of Dr. Scholl's Foot Happiness Campaign.

This simple contest is confined to Chemists, and entries will be examined and judged by a group of independent and prominent men in the Chemists' Trade.

The entry which in the opinion of the judges, states the best reason for making a Dr. Scholl Window Display during the period will win £100.

The next best entry will win £50 and so on.

114 Cash Prizes in all, including 100 opportunities of a £1 Award.

The simplest, fairest way we can imagine to apportion the £335.

Full particulars have been forwarded to all Chemists together with entry forms—IF YOU HAVE NOT HAD YOURS KINDLY REQUEST ONE.

Note the closing date—Sept. 30th, 1937

Every Advertisement appearing during the 10 weeks of Dr. Scholl's Foot Happiness Campaign specially features the service offered to Foot Sufferers by The Chemist.—and illustrates and describes those of Dr. Scholl's Foot Comfort Aids which are distributed through our friends The Chemists!

MAKE THIS YOUR CAMPAIGN!

The SCHOLL MFG. Co., Ltd. 182-194 ST. JOHN STREET, LONDON, E.C.1





HEWARDS

TWICKENHAM

SPECIALISE IN ALL KINDS OF

SURGICAL APPLIANCES

Send your Enquiries to

THE

R. H. HEWARD CO.

CROWN ROAD WORKS

TWICKENHAM MIDDLESEX

Telephone: Popesgrove 2243, 2244 Telegrams: Beltruss, Twickenham or through your wholesaler

EMBOSSED SEALS, LABELS PRICING **TICKETS**

JAMES TOWNSEND

AND SONS

EXETER

London Office: 29, Farringdon Street,

E.C. 4.



but only RENDELLS sell

The conscientious chemist is not disposed to offer any contraceptive but Rendells. The responsibility of recommending new and untried products is always dangerous and a policy to be avoided.

The Public demand Rendells Pessaries, and the ever-increasing sales indicate that no other product will be accepted.

Rendells are nationally advertised. Obtain your share of this important business by using our latest advertising material. Write for full particulars.

W. J. RENDELL LTD.

HARDWICK HOUSE, 161/5 ROSEBERY AVENUE, LONDON, E.C.1

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ASPRO

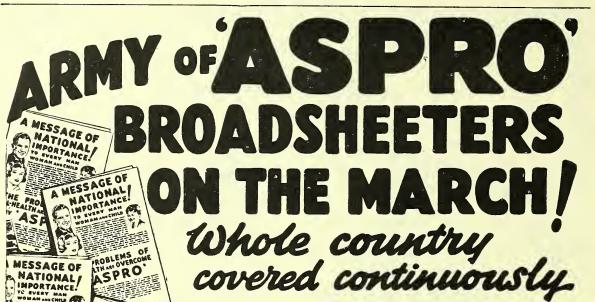
AESSAGE OF

MATIONAL

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A MESSAGE OF

NATIONAL



Our broadsheet distributors are always on the move. 'ASPRO' broadsheets are delivered regularly into EVERY HOUSE IN EVERY TOWN OF THE BRITISH ISLES. The work is carried out thoroughly and systematically by our own well-paid employees - men who have a personal interest in seeing the job is done properly. The effect on sales is phenomenal—it's just like sowing seed extra sales spring up wherever the 'ASPRO' broadsheeters go. You can secure the maximum amount of these sales for yourself by displaying 'ASPRO' advertising matter in your window. It gives people the vital reminder that YOU sell the product the whole town is hearing about. So display 'ASPRO' advertising continuously and reap the harvest of sales. And, remember-

NATIONAL

Link up with this enormous sales-producing force by giving the new 'ASPRO' Summer Display a prominent position in your windows.











Made in England by

ASPRO LIMITED, Slough, Bucks.

Telephone: SLOUGH 608

'ASPRO' consists of the purest Acetylsalicylic Acid that has ever been known to Medical Science, and its claims are based on its superiority.

No proprietary right is claimed in the method of manufacture or the formula.

IGGIST

This Supplement is inserted in every copy of The Chemist & Druggist

ESSEX STREET, LONDON,

AUGUST 14. 1937

ADVERTISEMENT TARIFF

ALL ADVERTISEMENTS are PREPAID, so that remittance must accompany instructions in each case. If it be necessary to telephone or telegraph an urgent announcement this may be done, provided the money is telegraphed at the same time. BUSINESSES WANTED and for DISPOSAL, PREMISES TO LET and FOR SALE, PREMISES WANTED, PARTNERSHIPS, GOODS for SALE and AGENCIES—6/- for 50 words; every additional 10 words or less, 6d. (Box No., 1/- extra.)

SITUATIONS OPEN-6/- for 40 words; every additional 10 words or less, 6d. (Box No., 1/- extra.)

SITUATIONS WANTED-2/- for 18 words; every additional 10 words or less, 6d. (Box No., 1/- extra.)

LEGAL NOTICES, TENDERS, AUCTIONS, and all specially-spaced announcements, 1/3 per nonpareil line (12 lines = 1 inch single column). (Box No., 1/- extra.) MISCELLANEOUS (Wholesalers') Section for odd and second-hand lots—10/for 60 words: 1/- for every additional 10 words or less. (Box No., 1/- extra.)

EXCHANGE COLUMN (for Retailers, etc.)—Twopence per word, minimum 2/-. (Box No., 1/- extra.)

REPLIES FROM ADVERTISERS-1/- per line; 3 lines 2/6.

THE CHEMIST & DRUGGIST, 28 Essex St., Strand, London, W.C.2 Telephone: Central 6565 (10 lines). Telegrams: "Chemicus, Estrand, London."

CLOSING FOR PRESS

All advertisements intended for insertion in this Supplement

must reach us not later than

FIRST POST THURSDAY MORNING

56 LUDGATE HILL, ESTABLISHED 1846 Telephone Nos.: CITY 2283 & 7477 May be CONSULTED at their Offices on MATTERS of SALE, PURCHASE & VALUATION

We make no charge to purchasers, and invite intending buyers to communicate with us, stating their requirements

1.—FRINTON (NEAR).—General Retail Business; takings well over £3,000 per annum; net profit well over £600; Accountants' figures; takings last week over £250; purchase price required £2,500.
2.—WEST LONDON.—Good-class Business run under management; very old-established; returns about £40 per week; good profits; sublets cover rent and rates; full details upon application.
3.—STREATHAM (NEAR).—High-class Retail and Dispensing Business for sale; returns under management £3,000 per annum; stock worth £750; valuable fixtures; Vendor anxious to sell and will refuse no reasonable offer. worth £750; valua no reasonable offer.

4.—LIVERPOOL STREET (NEAR).—Family Retail Business for sale owing to retirement; net profit £500 per annum; property may be purchased or leased; price for goodwill and fixtures £400, stock at valuation; full particulars upon application.

5.—NORTH LONDON.—III-health causes sale of two businesses situate in excellent positions; takings last year £2,727; excellent profits; stock worth £700-£800; inclusive purchase price required £2,000 all at; Accountants' figures available.

6.—HARROW.—High-class Retail and Dispensing Business with small Optical connexion; takings over \pounds 50 per week; modern stock and fixtures; comfortable flat; reasonable rental; price \pounds 1,600 or valuation terms entertained.

7.—EWELL (NEAR).—Good-class Retail Business run under management; takings approach £2,400 per annum; stock worth £450; modern living accommodation; handsome fixtures; price £1,150 all at, or valuation terms entertained.

8.—BARNARD CASTLE.—General Retail Business for immediate disposal; price £300 all at; net profit about £4 per week; nice living accommodation; new lease at £1 is. per week. 8.—BARNARD CASTLE.-

9.—WESTCLIFF (NEAR).—High-class Business taking over £60 per week; good profits; heavy stock; long, valuable lease; price about £2,250, or valuation terms entertained.

to.—BIRMINGHAM.—General Middle-class Business; net profit £5 rr week; established 40 years; excellent stock; inclusive purchase price £200.

11.—WORCESTERSHIRE (DEATH VACANCY).—Good-class Retail and Dispensing Business; takings last year £4,268; excellent profits;

stock and fixtures worth approximately £2,400; premises can be purchased or leased; inclusive purchase price required £3,500.

12.—RHYI..—Old-established Business for sale; turnover exceeds £800 per annum; excellent premises; nice living accommodation; stock worth about £400; furthur particulars on application.

-SURREY.—General Retail Business for immediate disposal; 13.—SURREY.—General Retail business for immediate disposal; established one year; takings present rate £27 per week, increasing; sublets cover rental; double-fronted, beautifully fitted spacious shop; stock worth about £320; further details upon application.

14.—BARKING.—Middle-class Family Retail Business; net profit £350 per annum; stock to suit purchaser's requirements; increasing takings; price required for goodwill, fixtures and fittings £225, s.a.v.

15.—BOURNEMOUTH.—Very old-established High-class Retail and Dispensing Business for sale; takings exceed £2,000 per annum; stock worth about £500; valuable lease; inclusive purchase price required £850 all at.

16.—KENT (FEW MILES OUT).—General Retail Business with increasing turnover, this year approximately £1,800; rent £65 per annum; new lease; living accommodation if required; stock and fixtures worth £700; no reasonable offer refused.

17.—PORTSMOUTH.—General Retail Business; established by vendor 25 years ago; takings last year £1,574; good profits; stock worth £550; nice living accommodation; long garden; new lease; inclusive purchase price required £1,000.

18.—HASTINGS.—Middle-class Cash Retail Business making $\xi 8$ per week net profit; turnover last year $\xi 1,468$; attractive mahogany fixtures; nice living accommodation; price $\xi 1,000$ all at, or valuation terms entertained.

19.—SOUTHAMPTON.—Middle- and Working-class Cash Retail Business; takings 1936, £1,041, N.H.I. £197; net profit £362; fixtures worth approximately £150, stock can be reduced to suit a purchaser; rent £40 per annum; long lease; price for lease, goodwill and fixtures, etc., £165, s.a.v.

20.—SOUTHEND.—Cash Drug Store for sale; net profit £3 10s. per week; very good, clean stock; attractive fixtures; inclusive purchase price required £300.

nists' Transfers, Valuations for Sale, Stocktaking & Probate

Special Terms for Income Tax Valuations and Preparation of Accounts by Qualified Accountants.

ERNEST J. GEORGE & CO

Bank Chambers, 329 HighHolborn, London, Telephone Nos.: Holborn 7406 & 7407 (2 lines)

■15 Bridge Street, Walsall Telephone: Walsall 3774 Lancashire and District Representative: Mr. E. BROWN, 21 Davenport Road, Hazel Grove, Stockport. Telephone: Great Moor 2405

Correspondence, mutually confidential, is invited from prospective purchasers of the following businesses at present available for purchase.

(C1) NORTHERN COUNTY.—Good-class family business of very old establishment; turnover increasing, and now averaging at the rate of nearly \(\xi_4,000\) per annum; excellent house; property (freehold) can be purchased or leased at reasonable rental; price \(\xi_2,000\) pictured (c2) MIDDLESEX (RETIREMENT VACANCY).—Attractive, good-class Pharmacy, with up-to-date self-contained flat; turnover for 1936-37, \(\xi_2,056\); returns this year have been steadly increasing and are now averaging nearly \(\xi_500\) well year enumum; rates \(\xi_300\); net profit to Owner-Proprietor upwards of \(\xi_500\); price \(\xi_1,500\) all-at.

(C3) NORTH MIDLANDS (PROSPEROUS TOWN).—Old-established business with freehold; turnover upwards of \(\xi_2,750\) all-at.

(C4) BOURNEMOUTH.—Exceptional opportunity to acquire established ania-road Pharmacy, offering good scope for increase with undivided attention; prosent returns approximately \(\xi_1,750\) per annum; net profit \(\xi_450\); very low rental; quick sale essential, and owner will accept \(\xi_1,000\) all-at, including stock \(\xi_700\); geuuine reason for selling; visited and well recommended.

(C5) IONDON, S.E.—Mah-road business occupying prominent corner position; increasing turnover, now at the rate of approximately \(\xi_2,300\) per annum; net profit \(\xi_2,500\) enter 1,000 all-at; exceptional opportunity.

(C6) SURREY.—Particularly attractive modern Pharmacy, situated in good-class district; at present under management; turnover for last financial year, \(\xi_2,357\); net profit to owner-proprietor approximately \(\xi_2,300\) per annum; net profit \(\xi_550\) follows have a subject to valuation.

(C7) \(\xi_300\) DOWN AND BALANCE BY ARRANGEMENT (NEAR TO STREATHAM).—Progressive cash business, situated in thickly populated middle-working-class area; turnover for 1936, \(\xi_1,325\); gross profit, \(\xi_499\); rent \(\xi_80\) includin

advised.
(C8) SOUTH STAFFS.—Old-established business with Wine Licence; turnover for last financial year, £1,626; gross profit nearly 40 per cent.; living accommodation with garage, etc.; low rental; price for quick sale

£200, plus value of stock and fixtures; near offers considered; Owner has

foot Road, Hazel Grove, Stockport. Telephone: Great Moor 2405

£200, plus value of stock and fixtures; near offers considered; Owner has
agreed to purchase, through our agency, a larger business in the South.

(C9) SURREY (ON MAIN LONDON TO BRIGHTON ROAD).—
Old-established family retail business, situated in shopping thoroughfare;
present returns average approximately £1,450 per annum, and steadily
increasing; excellent scope; living accommodation; stock and fixtures
worth approximately £500; price £800, or near offer.

(Cro) RUISLIP (NEAR).—Good profit-earning business situated iu
main shopping street; modern house above, including garden and space
for garage; turnover upwards of £1,800 per annum; net profit approximately £470; reasonable rental; good scope; £400 is asked for goodwill,
together with the respective values of stock and fixtures, but reasonable
offers will, no doubt, be considered.

(C11) NOTTS.—Pharmacy with Wine Licence; increasing turnover,
which for the last financial year amounted to £1,820; up-to-date house
with garage; property can be purchased or taken on lease at a rental of
££8 per annum; at present under management; genuine reason for selling;
small goodwill plus value of stock and fixtures.

(C12) WILLESDEN GREEN.—Old-established, good-class Pharmacy,
occupying prominent main-road positiou; for sale following death of
Proprietor some time ago; present returus approximately £1,100 per
annum, with scope for substantial increase; stock approximately £500;
fixtures £400; no goodwill asked, and offers will be considered.

(C73) BERKSHIRE,—Middle-class Cash Business, with small up-todate flat, at present sub-let; increasing turnover, which for the 1936–37
financial year amounted to £2,650; net profit to Owner-Proprietor
£500/£550; rent £100; lease 21 years; price £1,450 all-at, or offer.

(C14) EAST KENT.—Middle-working-class cash business, with excellent
potentialities; turnover rapidly increasing, now at the rate of approximately £1,800 per annum, and should average over £50 per wee

Valuations for transfer, probate, income tax, etc., promptly executed at economical rates. Agency for locums, managers, etc.

THE ASSOCIATION OF MANUFACTURING CHEMISTS,

(Business Agency, Transfer & Valuation Department) KIMBERLEY HOUSE, and at EXCHANGE CHAMBERS, Holborn Viaduct, LONDON, E.C.1 2 Bixteth St., LIVERPOOL. PARKIN S. BOOTH, Valuer. Tels.: CITY 3691 (4 lines). VALUATIONS. SALES OF BUSINESSES. STOCKTAKINGS. Enquiries Invited.

BUSINESSES FOR DISPOSAL

6s. for 50 words or less; 6d. for every additional 10 words or less, prepaid. (Box No., 1s. extra.)

BLACKBURN (Pleasant Suburb, Main Road).—Small, old-fashioned Business; same hands forty-eight years; illness compels sale; good Insurance; owner has not stocked patents, toilets or photo; splendid living accommodation; vendor owns property; small capital required. Rare opportunity for live man. Davidson, Chemists, Witton, Blackburn.

BLACKPOOL.—Old-established Business, lock-up; central position; Kodak agency; average yearly turnover between £1,200 and £1,400; great scope for Qualified Herbal Chemist, etc.; inclusive price, £750 (stock £350 to £375); other details to genuine buyers with the necessary capital at interview only. (No triflers). 165/4, Office of this Paper.

DOURNEMOUTH, centre of town.—High-class Dispensing and Homœopathic Pharmacy established 1860; double-fronted shop, two large floors over and large beasement sublet £175 per annum. Average turnover £2,000. Price very low. Suggested £400 lease and fixtures, stock at valuation. "J.," 21 Eldon Road, Bournemouth.

DRIDGNORTH, SHROPSHIRE.—Exceptional opportunity young or elderly Chemist. Drugs, patents, films, dairy stores; inland holiday resort; corner premises; main road; double-fronted; electric; well fitted; now unqualified; ample scope qualification chemist, optics; no near opposition; rent, inclusive, 17s. 6d. per week; returns about £900; £250 or reasonabe offer. Middleton, 1 Mill Street, Bridgnorth,

HODNET, near Market Drayton, Salop.—General Retail business; takings last three years average £1,250 per annum; substantial panel; no opposition iu village; rcnt £30 per annum, including house; immediate possession; price, for stock, fixtures and fittings, £600.—Apply John Stubbs, Parkiu & Co., 41 North John Street, Liverpool 2.

KENT.—11 miles Charing Cross, well-stocked Pharmacy with Optical sideline; present returns without Optics, £26 per week, still increasing under manager; established 6 years; detached, corner, double-frouted shop; house attached; side entrance; garden; long lease; price, £150, stock, fittings and fixtures at valuation. Write, BM/NDAK, London, W.C.1.

L ONDON, S.E.—Opportunity to acquire comfortable Retail Dispensing Business in residential district at value of stock and fittings, £250; commodious lock-up shop and Dispensary; inclusive rent £4 month. Chemist, 164/5, Office of this Paper.

OUTH OF ENGLAND.—Drug Store for sale, established 70 years, Kodak and Selo Agency, Herbal connexion; long lease, low rental; genuine reasons for disposal; price, all at, £175. Apply 308/215, Office of this Paper.

COUTH SHIELDS.—Chemists' business in main street; turnover £1,200, increasing; N.H.I.; fixtures and fittings, £175; stock at valuation about £525; owner going South. 308/208, Office of this Paper.

YORKSHIRE SPA. EXCEPTIONAL OFFER.—Lock-up in thickly populated area on main road corner; double-fronted; takings—has done £34 weekly; during past twelve months has been neglected, takings now £16, plus N.H.I.; no reasonable offer refused; rent £52; rates £20; price £150, plus stock, £200. 160/1, Office of this Paper.

(ROWING Midland Town.—Good class established business; well-fitted double-fronted shop; corner position; good living accommodation; turnover approximately £2,000 per annum; price £1,200 (part can remain), including stock, £750. 308/209, Office of this Paper.

£125 ALL AT (Epsom District).—Owner having sold freehold wishes to dispose of Chemist business now under Unqualified Management; scope for N.H.I. and Optics; practically new fittings and well stocked for Qualified Chemist, Dispensing, etc.; nice home and garden; low rent; no opposition. 164/27, Office of this Paper.

BUSINESSES WANTED

6s. for 50 words or less; 6d. for every additional 10 words or less, prepaid. (Box No., 1s. extra.)

 ${
m D^{RUG}}$ store wanted, West Riding preferred but not essential. Send full particulars to 165/2, Office of this Paper.

PREMISES TO LET

6s. for 50 words or less; 6d. for every additional 10 words or less, prepaid. (Box No., 1s. extra.)

DAVYHULME, URMSTON (near Manchester).—Good-class Chemists; new shopping centre (13 shops) in the heart of large estate, the only shops allowed on this estate; the nearest other shops one mile away; 800 houses now erected and new houses being built at rate of 250 per annum; each shop strictly restricted to its own trade; 9 shops now occupied; splendid living accommodation; rent £100. Apply, A. Locke, Lostock Road, Urmston, near Manchester.

GOODMAYES LANE, GOODMAYES.—Exceptional opening for Chemist in newly built block of attractive shops and flats. Special position with very minimum of opposition; surrounded by houses and still developing. Rent £100 a year to start. Allowance towards shop front. Application to Owner, Forest House, High Stone, Leytonstone.

A LOCK-UP SHOP to be Let, suitable for a Drug Store, Herbalist, Toilet, Perfumery, Kodaks, Sports, Novelties for juvenile amateurs, etc.; rent 11s. 6d. per week, exclusive; no letters replied to, but apply personally to 141 Green Lanes, Clissold Park, N.16. (Give 3 Loud Knocks several times, or one Loud Knock.)

LOCK-UP SHOP adjoining Colliers Wood Underground Station; busy situation. Fine opening for Chemist or Optician. Rent £60 per annum. Three months' peppercorn to approved tenant. Apply Alaway and Partners, 20 Bloomsbury Square, W.C.1.

108. PER WEEK.—Double-fronted lock-up Shop in Harlow, Essex (London 23 miles); good position in shopping centre; all main services conuected; district population about 5,000; now ouly one Chemist. Apply, Strangways Dixon, F.A.I., Harlow, Essex. Phone: 3228.

DIRECTORSHIPS

QUALIFIED Managing Director required for Private Limited Company (Capital £5,000) being formed to take over oldestablished business showing a net profit exceeding £1,100 per annum, situated in pleasant Midland County Town. Investment of £1,000, plus salary, will return £450 per annum. Only experienced and capable man considered. Replies in confidence to 162/8, Office of this Paper.

AGENCIES

A GENTS with connexion among Chemists required to offer attractive speciality in the Confectionery class of goods. Liberal commission. State goods now offering and territory worked, to A. S., c/o E. W. Barney, Ltd., 346 Strand, London, W.C.2.

Wanted.—Advertising Distribution Agency for a new line of Digestive Tea; well-known firm; steady £25 per week available. 160/4, Office of this Paper.

PATENTS

THE Proprietors of British Patent No. 352062 relating to "Improvements in and relating to Insecticides" desire to enter into negotiations with one or more firms in Great Britain for the grant of Licences to manufacture under royalty. Enquiries to be addressed to D. Young & Co., Chartered Patent Agents, 11 and 12 Southampton Buildings, London, W.C.2.

SITUATIONS OPEN

RETAIL (HOME)

6s. for 40 words or less; 6d. for every additional 10 words or less, prepaid. (Box No., 1s. extra.)

BRENTFORD, Middlesex; Unqualified Assistant for Dispensing and Counter, to commence August 23; permanency for suitable man. State salary required and age, A. Wood, Ltd., 116 High Street, Brentford, Middlesex. Telephone: Ealing 0988.

CHANNEL ISLANDS.—Junior Assistant, Unqualified; Part I preferred; used high-class Pharmacy; experience window dressing, Dispensing, and of good address; permanent. Full particulars, photo and references, C. M. Stone, Chemist, Bath Street, Jersey, C.I.

ILFORD.—Experienced Qualified Manager required forthwith; nice living accommodation; good salary with commission; photograph with application will assist. 308/219, Office of this Paper.

L ONDON, E.2 (near City).--Qualified Assistant; middle-class district; N.H.I. and Cash Retail; state full particulars of experience, names of references, when disengaged, age and salary required. Apply (letter only), Pharmacist, 115A Stoke Newington Road, Londou, N.16.

L ONDON, N:—Assistant, Unqualified, desiring permanency; must be good at Counter and Windows, light Dispensing; progressive position to right applicant. Usual particulars, salary and when disengaged to "Statim," 164/36, Office of this Paper.

L ONDON, N.—Qualified or Unqualified Assistant required for holiday relief, permanency to suitable man. Apply with usual particulars and salary, also state when free. Apply 164/15, office of this Paper.

L ONDON, N.—Smart Junior Male Assistant required for mediumclass retail. Please give particulars as to age, height, experience, salary required; photograph if possible (to be returned). 163/11, Office of this Paper.

L ONDON, S.E.—Qualified M.P.S. Assistant, either sex, for usual dispensing and counter duties only, required immediately. The Prosser Roberts Co., Pharmaceutical Chemists, 13 Church Street, Camberwell, S.E.5.

L ONDON, S.E.—Qualified; part-time (evenings about two hours); light counter and N.H.I. Please state age, wages and time free, to 163/2, Office of this Paper.

L ONDON, S.E. (Waterloo).—Qualified Junior required; Dispensing and Counter; permanency. Full particulars of experience, etc., Briggs Chemists Ltd., 126 Hoe Street, Walthamstow, London.

L ONDON, S.W.—Manager required for small branch in workingclass district; salary £4 per week and free house. Applications stating age and experience, by letter, to Peters, 186 Lavender Hill, S.W.11.

L ONDON, WEST END.—Qualified Male Assistant, capable of taking charge if necessary, required in about five weeks for good-class business; permanency for the right man; good appearance and Salesmanship essential. State age, height, salary required, experience and when disengaged. 164/44, Office of this Paper.

L ONDON, W.6.—Smart Qualified male Assistant; permanency. Call, phoue (Riverside 3348) or write, giving full particulars, including salary required. J. D. Thompson, 211 King Street, W.6.

N.W.O.—Qualified Lady or Gentleman with or without small required immediately. Apply, Solicitor, 53 Woodstock Road, Golder's Green, N.W.11.

WOLVERHAMPTON.—Wanted, a thoroughly reliable Assistant; one who has had experience in good-class business and seeking a permanency; age about 30. Apply, giving full particulars, to W. H. Hodge, Chemist, 68 Chapel Ash, Wolverhampton.

A SSISTANT, Apothecary Hall or Unqualified, for Dispensing and light Counter; temporary or permanent. T. M Ashford, M.P.S., 16 Market Square, Aylesbury.

A SSISTANT for middle of September; young, energetic; tall, about 5ft. 8in.; state references; progressive salary to capable man. Frank Purcell, Chemist, Strand Street, Douglas, Isle of Man.

A SSISTANT, Unqualified, required, used to good-class Family business; good experience in Dispensing essenial. Full particulars, age, experience and when free, also salary required, and enclosing references, W. Bates & Co., 50 Oxford Street, Southampton.

PROWNS CHEMISTS (STOKE-ON-TRENT), LTD., have several vacancies for young Assistants and Improvers. Apply by letter to the Directors, Messrs. Brown, Chemists (Stoke-on-Trent), Ltd., 27 Stoke Road, Stoke-on-Trent.

DISPENSER, fully qualified, wanted daily from about 11-1 for small Hospital at Hampstead. Salary £6 per month and dinner if desired. Apply, with references, to Medical Superintendent, St. Columba's Hospital, Swiss Cottage, N.W.3.

 $E^{\rm LLIOTT}$, Clifton, Bristol, requires Junior Dispenser, September 19 or 26; no N.H.I. experience essential. State terms.

JUNIOR Assistant; good all-round experience Counter, Dispensing; quick and reliable Dispenser essential. State fullest particulars, age, experience, when disengaged, salary required, Massingham's Ltd., 34c Green Street, London, E.2.

JUNIOR Assistant (male) required for good-class Family and Dispensing business. Apply by letter, stating age, height, experience, salary required and when disengaged, to J. W. Rumsey & Son, 535 Lordship Lane, S.E.22.

JUNIOR Assistant (Male) required for good-class Family and Dispensing business in Harrogate. State age, wages, experience, etc. Photo if possible. 163/5, Office of this Paper.

JUNIOR Assistant required. Pleasant neighbourhood. If application is written please state wage required.
62A Plumstead Common Road, Plumstead, S.E.18.

JUNIOR Assistant, Unqualified, required middle September for good-class Dispensing business, Hampstead; good Window-dresser. State experience, age, height, salary required and when free for interview. 164/21, Office of this Paper.

JUNIOR Unqualified Assistant, man or woman required, for goodclass Dispensing business offering exceptional experience. Reply, stating experience and salary required, to H. Reynolds, M.P.S., 9 Becket Buildings, Worthing.

LADY Assistant wanted for good-class family business. Full particulars, including photo, to F. R. Burton, M.P.S., New Street, Wellington, Shropshire.

LADY Assistant, young, preferably with Counter experience, required to assist in S.E. London Drug Store; permanent post with good opportunity to learn business. 164/4, Office of this Paper.

L ADY, Qualified, wanted; free accommodation in flat over shop; another lady employed; no Sunday evening duties. Apply, giving particulars of salary, etc., required, Lutons Chemists, Ltd., 7 High Street, Yiewsley, Middlesex.

PHOTOGRAPHS, TESTIMONIALS, &c.

When replying to advertisements in this section applicants are strongly advised not to send (unless specially requested) ORIGINAL TESTIMONIALS or VALUABLE PHOTOGRAPHS. Many of these announcements produce an exceptionally large response and, as can be readily understood, the task of returning photographs, testimonials, &c., is one of some difficulty.

LOCUM, Qualified, required at once, two weeks or longer, permanency if satisfactory, for good-class business, London, S.W. C. H. Smith, 81, Shirley Avenue, Croydon.

LOCUM, Qualified, required August 30th to September 11th inclusive; no Sunday duty. Write or 'phone Welbeck 7802, Loesby-Jones, Ltd., 4 Thayer Street, W.1.

L OCUM required September 6th to 11th for good-class Pharmacy in Watford district; lady or gentleman; no extra duties and easily run business. 162/3 Office of this Paper.

MANAGER (age 30/40), competent and experienced, courteous in manner, trustworthy, permanent and progressive appointment, good Window-dresser and tactful Salesman essential, optics an advantage. Full particulars in first letter, enclosing recent photograph. Chase & Bell, 100 Richmond Road, Earls Court, S.W.5.

OPTICIAN, Qualified, with Pharmacy experience, required at earliest. Full particulars of experience, age, salary required and references, to Northover, 32 Harlestone Road, Northampton.

QUALIFIED Assistant, London. Apply, Lewis & Burrows, 146 Holborn, E.C.1.

QUALIFIED Assistant required, middle-class Pharmacy; start August 30. State age and salary. P.C.B. 252/28, Office of this Paper.

QUALIFIED Assistant, with some experience of Toilets and general Counter work, required at once; middle and working-class trade; either sex; any age; permanent post. Apply by letter, stating salary required, to 4 Dewhurst Road, West Kensington, W.14, or 'phone for appointment, Shepherds Bush 3505.

QUALIFIED Lady or Gentleman, experienced, required to take charge of country business at once. Please send references, full particulars and salary required, 164/23, Office of this Paper.

QUALIFIED Lady wanted at once; comfortable and permanent position. Full particulars in first letter, or apply personally, T. Emery (Chemist), Ltd., 8 High Street, Ealing. Telephone: Ealing 2165.

QUALIFIED Locum for Kenton district in September. State experience and salary, 164/11, Office of this Paper.

QUALIFIED Male required immediately (permanency). M. French (Chemists), Ltd., 152 Mare Street, Hackney, corner of Well Street, E.8. Phone, Amherst 1440.

QUALIFIED Manager for medium-class business 30 miles from London; moderate salary and commission; house available; preference given to one who can invest capital with view to purchase. 164/26, Office of this Paper.

QUALIFIED Manager (male or female) wanted for branch shop in small seaside town, early September. Apply, stating age, height, experience, salary required, when disengaged, with references and recent photo, to Hinton Lake & Son, Ltd., 41 High Street, Exeter.

QUALIFIED Manager required for high-class business doing large amount of private dispensing (no N.H.I.), and large sale of high-grade photographic apparatus. Applicants must have sound knowledge of both these branches of business. Replies and full details in confidence. 162/80, Office of this Paper.

QUALIFIED Manager wanted at once for medium-class business, S.E. London. Send full particulars as to age, experience, height, whether single or married, with recent photograph, interview later will be arranged. 164/50, Office of this Paper.

QUALIFIED required at once to take charge of small Dispensary in Retail Pharmacy; good salary, comfortable post, no Sunday duty. Full particulars, references, age, etc., to Smith, 48 The Parade, Socketts Heath, Grays, Essex.

REQUIRED in September, Unqualified Assistant, accustomed to good-class Dispensing business; state when free and salary required. Applications not answered in three days declined with thanks, White, Çhemist, Ashford, Kent.

TAYLORS, British Chemists, have several vacancies for Qualified Chemists in Birmingham and Manchester districts; permanent employment with good prospects to suitable applicants. Apply Retail Staff Manager, 70 Vauxhall Bridge Road, London, S.W.1.

TAYLORS, British Chemists, require Qualified Man for relief duties in London; permanent employment and advancement to suitable applicant. Apply 70 Vauxhall Bridge Road, London, S.W.1.

UNQUALIFIED Assistant (about 25 to 30) wanted, to start September 13th; permanency; good dispensing experience and window dresser. Apply, with usual particulars, to A. G. Harden, Chemist, 46 Grosvenor Road, Tunbridge Wells.

UNQUALIFIED Assistant for Family and Dispensing business, to commence duties middle of September. Please apply by letter stating age, height, experience and salary required. W. E. Partridge, Chemist, 109 Coldharbour Road, Redland, Bristol 6.

UNQUALIFIED Junior wanted for Counter and Dispensing.
Apply with details of experience, salary, etc., to Price, 79
Banstead Road, Carshalton Beeches, Surrey. Phone Sutton 928.

UNQUALIFIED Male Assistant required September 20; must be capable N.H.I. Dispenser and good Counter hand, with some Photographic knowledge. Apply, stating age, height, experience (photo, if possible), and references, to L. A. James, 6 Grange Parade, Uxbridge Road, Hayes, Middlesex (about half-hour West End, London).

UNQUALIFIED male required; good counter experience, Dispensing, etc.; suburb S.W. London. State full particulars, 163/12, Office of this Paper.

WANTED, elderly Qualified Man; short hours and light duties. Please state age and salary required, "Chemist," 64 High Street, St. Mary Cray, Kent.

WANTED.—Qualified Chemist for branch, male or female, end of August; references required. Apply Carr, Chemist, 58, High Street, Cleethorpes.

WANTED.—Qualified locum, August 23 to September 4, inclusive. Write C. Walkington Fox, Chemist, Hull Road, Anlaby, Hull, with usual particulars.

WANTED, Qualified Man for good-class husiness; one with a thorough knowledge of Homeopathy in all its branches preferred; easy hours; no Sunday duty. Full particulars by letter only to Radford, 69 Temple Row, Birmingham.

WANTED.—Young smart Unqualified Assistant, good Counterhand and capable Dispenser, for medium-class business in S.E. London. Please state experience and salary required. Apply 308/211, Office of this Paper.

YOUNG Qualified Man for permanency, E. London; middle and working-class trade. Apply, giving full particulars age, height, salary required; newly qualified would suit. 157/19, Office of this Paper.

£4 10^{S.} PER WEEK.—Qualified Manager required for Portswith initiative; immediate vacancy. Apply, 308/213, Office of

WHOLESALE

A SPECIAL REPRESENTATIVE FOR LONDON required by a firm of national importance marketing a well-known advertised line; to an ambitious man of outstanding ability, having a good connexion with Chemists, the appointment offers unusual scope; the man sought should be above the average, to whom a good salary will be paid; applicants must possess a car. Write, stating age and full particulars, which will be treated in confidence, to 307/195, Office of this Paper.

A WELL-KNOWN firm marketing nationally advertised Toilet products requires experienced Representative having established connexion in the Midlands area with Chemists, Ladies' Hairdressers and Stores; salary, expenses, and Commission basis. State age, past experience, salary required to 164/46, Office of this Paper.

A SSISTANT-BUYER required by London Export Merchants; Lady preferred; not necessarily Qualified, but with Shorthand, Typing and good experience in handling indents for Colonies and own correspondence. Write fully, giving age, experience and salary required, to Box ZQ151, c/o Deacon's, 5 St. Mary Axe, E.C.3.

EXPORT Manufacturing Chemists require young Girl, good handwriting, for general office work. Nu-Organic Remedies, Ltd., 2 Featherstone Buildings, High Holborn.

HIGH-CLASS REPRESENTATIVE wanted for the MIDLANDS by a London firm marketing a nationally advertised line to Chemists; a good salary and commission will be paid to the right man; the vacancy would suit a man who is seeking more responsibility and greatly improved prospects; reliable men with good references please apply; possession of a car essential. Give age, experience, etc., to 307/196, Office of this Paper.

LARGE Pharmaceutical Manufacturer requires competent Qualified Chemist with practical experience in the manufacture of pharmaceutical preparations; give full details, stating age, wages expected, and experience. 308/210, Office of this Paper.

MANAGER for Packed Goods Department, London Drug House, capable of designing labels and showcards and producing new lines, knowledge of printing department, costing, etc. State experience and salary required. 308/212, Office of this Paper.

MANUFACTURING Chemists (Yorks) require smart Man to take charge of Pharmaceutical Specialities Packing and Dry Drugs departments; must have initiative, and be able to control staff. Only those with experience need apply, with full details, salary required, etc., to 308/214, Office of this Paper.

MANUFACTURERS of modern Insecticides, selling only to Commercial users, Shipowners, Ship-store Merchants, Factories, Public Authorities, etc., offer exclusive areas to suitable Representatives looking for a profitable sideline and who are willing to operate on a commission hasis: 164/49, Office of this Paper.

PHARMACIST to assist in Manufacturing and Analytical Departments; Wholesale Manufacturing experience absolutely essential. State qualifications, experience and salary required, by letter only. C. R. Harker, Stagg & Morgan, Ltd., London, E.1.

PRODUCTION MANAGER.—International capable manufacturing cosmetics requires Executive accustomed to supervising entire plant of modern factory and maintaining output by means of budgetary control. Practical knowledge of engineering essential. Write, giving details of age, salary required, and experience in cosmetic trade. Box 577, c/o C. Mitchell & Co., 1 Snow Hill, E.C.1.

DEPRESENTATIVE required for NORTH YORK-SHIRE, DURHAM, NORTHUMBERLAND, CUMBERLAND AND WESTMORLAND by a well-known firm of Manufacturing Chemists; to an exceptional man possessing a connexion with Chemists the vacancy offers a very real opportunity; good salary and commission; applicants must have own car. Write, giving full particulars age, etc., to 307/197, Office of this Paper.

REPRESENTATIVE required by London Wholesale Druggists for Yorkshire and district, to call on Doctors and Veterinary Surgeons; preference to one with connexion in Yorkshire and with car. Apply by letter, giving fullest particulars and salary required, to 308/218, Office of this Paper.

REPRESENTATIVE wanted by an old-established firm of manufacturers, who have covered the ground for many years. Must have a good connexion with the best class of Chemists in Cheshire, Lancs, Yorks, North Wales. Part expenses and commission basis. 162/6, Office of this Paper.

PEPRESENTATIVES wanted for London and Eastern Counties and North of England, by established Toilet Preparation Manufacturers, with nationally-known proprietary articles; age about 30; experienced in calling on Chemists, Hairdressers and Stores. Salary, commission and expenses paid. Only capable practical men need apply, 308/216, Office of this Paper.

TRAVELLERS with connexions among Chemists, Hairdressers, Stores, Cutlers and Toilet Goods Stores, etc., wishing to add to their income and are able to carry an additional high-class branded liue on generous commission basis, are invited to write immediately; territories open: Yorkshire, Midlands, North and South Wales, S.W. Counties. 307/206, Office of this Paper.

 $W^{\rm ANTED}$ for London and Provinces, Representatives to handle a competitive line of Saloon Pins on commission basis. Apply 307/180, Office of this Paper.

WELL-KNOWN firm of Manufacturing Chemists require at once the services of a Young Man skilled in Chemists' modern Window Display. His age should be under 30; car-owner, and a man of education, intelligence and integrity. For the man who can prove by results the value and effectiveness of Window Displays on the Company's products, there is a definite prospect of an executive position. Personal photograph and also photographs of wiudow displays made will assist in making a decision; commencing salary £7 per week, car allowance and expenses. Apply, 308/217, Office of this Paper.

SITUATIONS WANTED

RETAIL (HOME)

2s. for 18 words or less; 6d. for every additional 10 words or less, prepaid. (Box No., 1s. extra.)

A SSISTANT, Unqualified, fully experienced all branches; whole or part-time; London area; interview by arrangement. 164/30, Office of this Paper.

BIRMINGHAM.—M.P.S. (23) desires permanency; good experience and references; £4. Jeffrey Stewart, M.P.S., 229 Perth Road, Dundee.

DISPENSER (Hall), Lady, requires position from Septemher or October; experienced Dispensing and Book-keeping; 11 years last post; good testimonials. 165/10, Office of this Paper.

FRENCH-SPEAKING, Unqualified, requires situation West End; Continental experience; free end of August. A., 25 Leamington Road Villas, Bayswater.

CERMAN LADY CHEMIST (25), possessing German qualifications, requires position in England or abroad; knowledge of four languages. P.C.B. 252/37, Office of this Paper.

ADY Dispenser (Hall), free now, requires post, Doctor or Hospital only, experienced both as locum or otherwise; London or suburbs; good references. 164/7, Office of this Paper.

L ADY Dispenser, 21 (Hall), desires post, Doctor or Hospital; experience hoth; knowledge book-keeping; drive car; Lancashirc, London or near preferred; free middle September. 158/8, Office of this Paper.

L OCUM, disengaged August 16-September 5 inclusive; experienced. Bark, 34 Coleherue Road, S.W.5. Phone: Flaxman 5533.

LOCUM, thoroughly capable, with excellent references; free August 14; any part; Unqualified. E., 83 Duckett Road, London, N.4.

LOCUM, Unqualified, well recommended; excellent all-round Pharmacy experience, Photography, etc.; free August 16 ouwards; permanency considered where service and ability would be appreciated. Spencer, 14 Bowling Green Street, Leicester.

MANAGING Director, Weston's, Chemists, Derby, recommends young Pharmacist for progressive post; free end of August.

PHARMACIST desires Managership in Hants, preferahly near Southampton; good experience, references; free one month. 163/18, Office of this Paper.

PROGRESSIVE position required by Qualified Chemist (age 31), married; ten years' experience as Manager, both Retail and Manufacturing; accustomed to responsibility and staff control; free now; salary £5 per week or equivalent; Northern Counties preferred. 164/40, Office of this Paper.

QUALIFIED Manager (39), desires change, experienced Buyer, Private, N.H.I., Counter, Photography, requires progressive post; excellent references; preferably S.W. London. 164/17, Office of this Paper.

QUALIFIED ten years (age 31 years), married; position required as Manager; country district preferred; experienced all branches, Photography, Dispensing, Frescribing, etc.; free now. 164/400, Office of this Paper.

QUALIFIED, young, keen, industrious worker, excellent experience, desires change, management preferred. 162/2, Office of this Paper.

QUALIFIED (27) requires Managership; 8 years' seaside, provincial, suburban and West End experience; progressive situation. Apply 163/10, Office of this Paper.

QUALIFIED (38), 5 ft. 6 in.; active, trustworthy; seeks sound permanency where experience and ability of value; accessible S.E., or with premises. P.C.B., 252/26, Office of this Paper.

UNQUALIFIED, Counter, Dispensing, Agricultural experience, seeks locum position, S. Devon; free to end September. C. Willcocks, Broadhempston, Totnes.

UNQUALIFIED (26), desires permanency, London preferred; experienced and conscientious worker; at liberty end of September. B., 30 Fitzroy Avenue, Belfast.

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A.A.A.A.—YOUNG energetic Scot, M.P.S., F.F.Sc., phase of the business, desires interview statim with progressive house with view to Assistant or Works or Staff Managership, home or abroad; first-class Retail and Wholesale experience; now Representing Pharmaceutical, Dental and Medical House of repute; capabilities bear strictest investigation. 157/2, Office of this Paper.

A FIRST-CLASS Representative for Lancashire, Cheshire, Westmorland, Cumberland, at present representing well-known firm, desires change; strong personal connexion of 11 years; own car; would consider agencies. 164/9, Office of this Paper.

NAMES AND ADDRESSES

When sending advertisements for any of the columns of this Supplement, advertisers—as a guarantee of good faith and not necessarily for publication—should always give their names and addresses. It sometimes occurs that this rule is not adhered to and delay and disappointment ensue. Strict attention to this detail will be appreciated.

A DVERTISER, considerable Retail experience, short but successful period as Traveller for well-known firm S.E. England, seeks similar post; well recommended; own car. Monfort, 4 Lawn Road, Broadstairs.

A DVERTISER, seeks to join reputable House, either inside or Representative; 25 years in trade; connexion Lancashire, Cheshire and North Wales; knowledge internal administration and pricing. 164/33, Office of this Paper.

A DVERTISER with sound experience of Pricing, Costing and Correspondence, seeks position where initiative and reliability are essential. 164/43, Office of this Paper.

COATER (26), single, maker of tablets and pills, all-round know-ledge of the respective different manufacturing methods and machines, seeks position, reliable references can be produced. 165/9, Office of this Paper.

CENTLEMAN (30), seeks position in/outdoor with Manufacturer of repute; 12 years' trade experience; real knowledge of Soap, Cosmetic and Toilet trade; present position Assistant Manager; smart appearance, keen, trained Salesman; S.W. Lancs, North Wales, West Midlands, but not essential; car driver. 165/8, Office of this Paper.

QUALIFIED M.P.S., experienced Salesman and Propagandist; for twenty years with leading Manufacturers; requires responsible position with progressive house; disengaged end September. "Galen," 21 Vicarage Road, Lingfield, Surrey.

REPRESENTATIVE, experienced, proven ability, connexion, car, bonded, would pioneer, seeks change; reputable house. Potts, 173 Belsize Road, N.W.6.

CALESMAN of exceptional ability; Drugs, Chemicals, Sundries, Toilet preparations, proprietaries, specialities and medical propaganda, desires position with house of repute, on salary and commission basis; can commence immediately. P.C.B. 252/31, Office of this Paper.

TABLET-MAKER (experienced), requires London situation; good knowledge Wholesale, Retail and Glandular products; able to take charge. 164/41, Office of this Paper.

WELL-KNOWN Representative, covering 8 Southern and South-Western Counties four times per annum by own car, is open for one sound additional line; excellent connexion Chemists, etc.; must be known line and good repeater; first-class references, 164/37, Office of this Paper.

YOUNG, energetic Qualified Chemist, desires interview with progressive Drug House of repute, with view to representation; wide experience and well known in Retail; good Salesman; own car; S. England preferred. 164/34, Office of this Paper.

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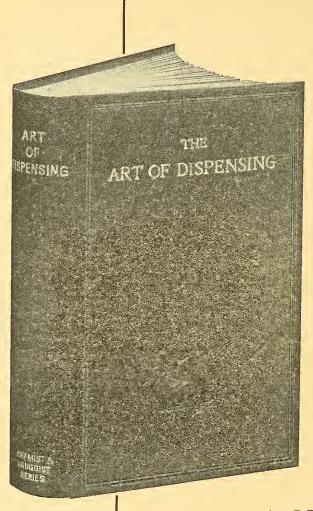
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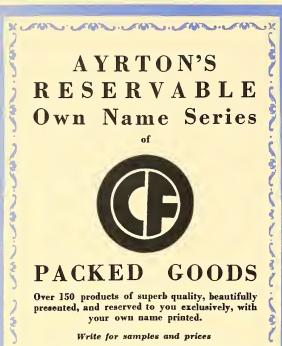
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